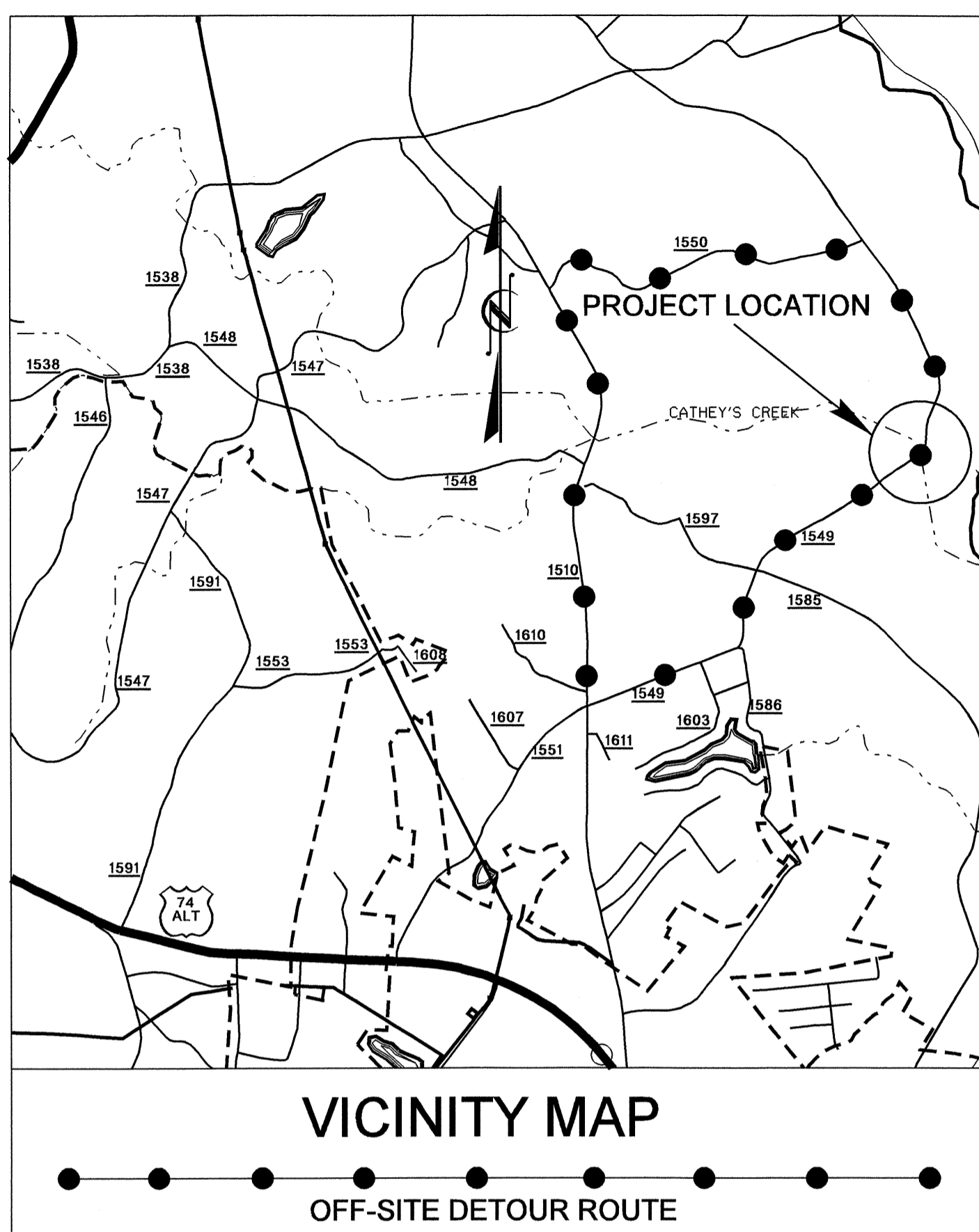


09/08/09

TIP PROJECT: B-4263

CONTRACT: C.201928



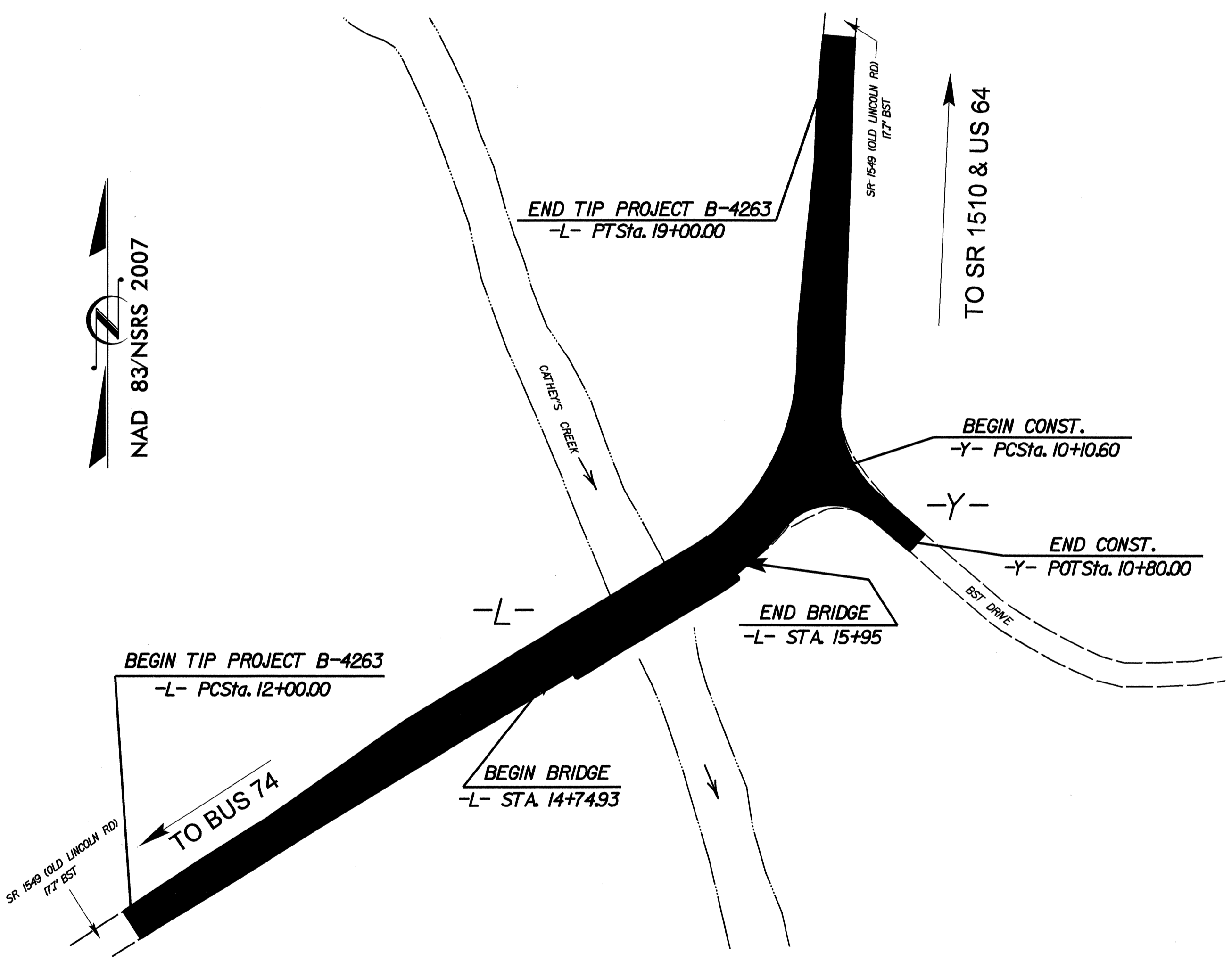
STRUCTURE

STATE OF NORTH CAROLINA
DIVISION OF HIGHWAYS

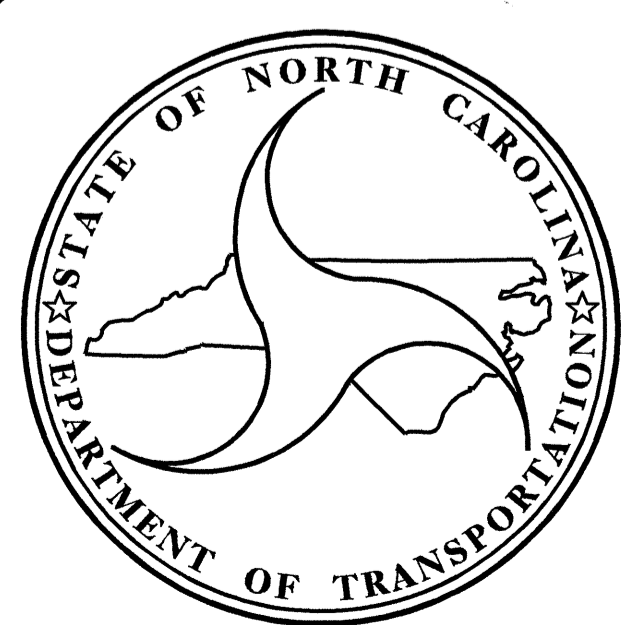
RUTHERFORD COUNTY

LOCATION: BRIDGE 41 OVER CATHEY'S CREEK AND APPROACHES ON SR 1549 (OLD LINCOLN RD.)

TYPE OF WORK: GRADING, PAVING, DRAINAGE, GUARDRAIL, AND STRUCTURE



STATE	STATE PROJECT REFERENCE NO.	SHEET NO.	TOTAL SHEETS
N.C.	B-4263		
STATE PROJ. NO.	F.A. PROJ. NO.	DESCRIPTION	
33605.1.1	BRZ-1549 (5)	P.E.	
33605.2.1	BRZ-1549 (5)	R /W UTILITIES	
33605.3.1	BRZ-1549 (5)	CONST.	



DESIGN DATA

ADT 2008 =	580 VPD
ADT 2025 =	800 VPD
DHV =	10 %
D =	60 %
T =	5 % *
V =	20 MPH
* TTST 2%	DUAL 3%
FUNC CLASS =	LOCAL

PROJECT LENGTH

LENGTH ROADWAY TIP PROJECT =	0.11 MILES
LENGTH STRUCTURE TIP PROJECT =	0.023 MILES
TOTAL LENGTH TIP PROJECT =	0.133 MILES

Prepared in the Office of:
DIVISION OF HIGHWAYS
1000 Birch Ridge Dr., Raleigh NC, 27610

2006 STANDARD SPECIFICATIONS

LETTING DATE:
SEPTEMBER 16, 2008

OMAR R. AZIZI, P.E.
PROJECT ENGINEER

EMILY E. MURRAY, P.E.
PROJECT DESIGN ENGINEER

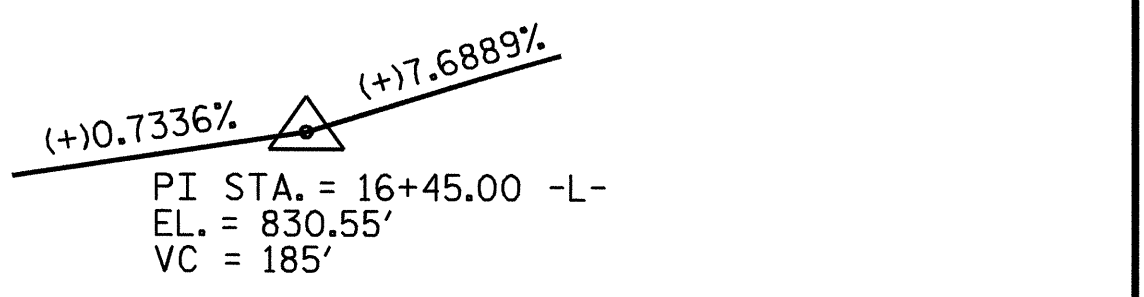
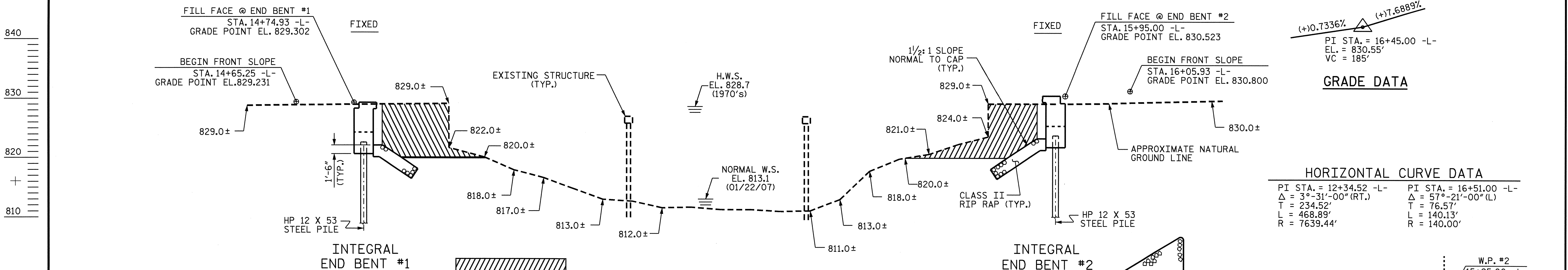
STRUCTURE DESIGN UNIT

DIVISION OF HIGHWAYS
STATE OF NORTH CAROLINA

STATE HIGHWAY DESIGN ENGINEER
DEPARTMENT OF TRANSPORTATION
FEDERAL HIGHWAY ADMINISTRATION

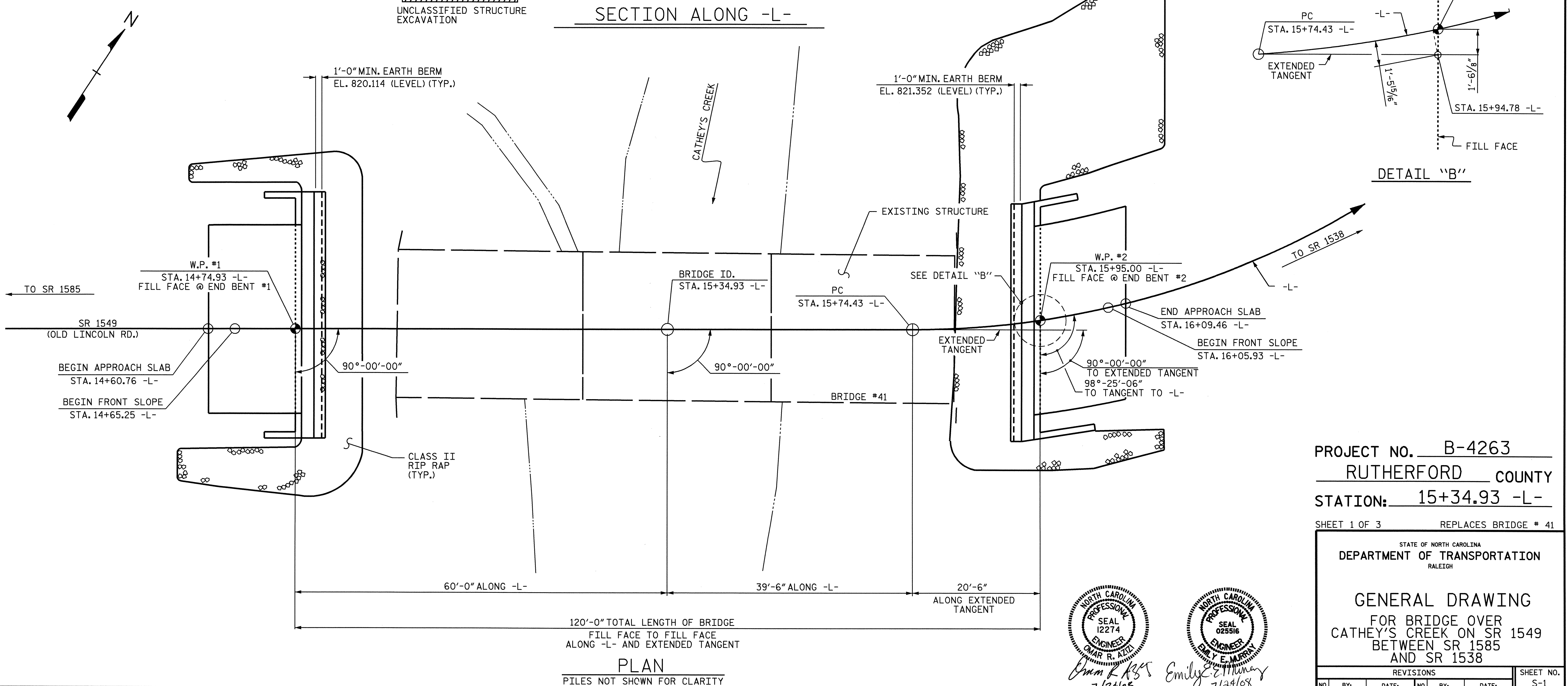
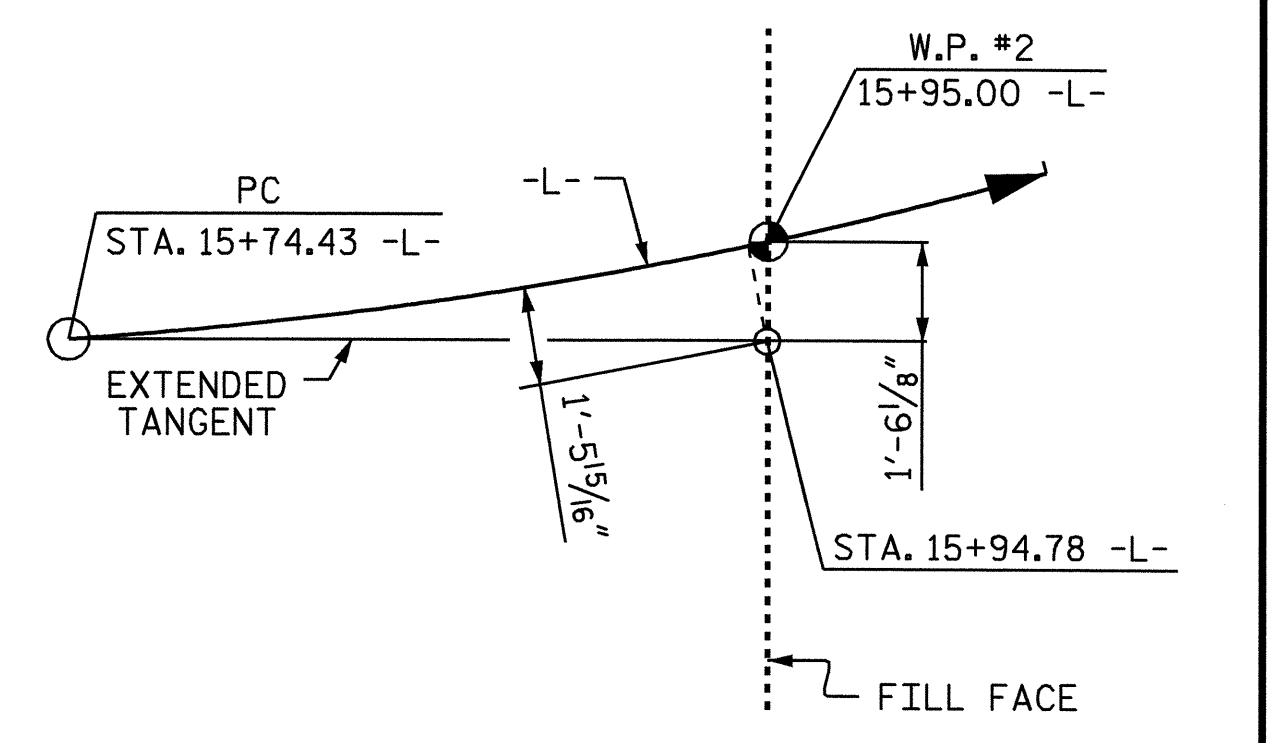
STATE HIGHWAY DESIGN ENGINEER
APPROVED
STATE HIGHWAY DESIGN ENGINEER DATE

16-JUL-2008 12:21
\$\$\$\$\$DGN\$\$\$\$\$
TAVERTTIE



HORIZONTAL CURVE DATA

PI STA. = 12+34.52 -L-	PI STA. = 16+51.00 -L-
Δ = 3°-31'-00" (RT.)	Δ = 57°-21'-00" (L)
T = 234.52'	T = 76.57'
L = 468.89'	L = 140.13'
R = 7639.44'	R = 140.00'



PROJECT NO. B-4263
 RUTHERFORD COUNTY
 STATION: 15+34.93 -L-
 SHEET 1 OF 3 REPLACES BRIDGE # 41

STATE OF NORTH CAROLINA
 DEPARTMENT OF TRANSPORTATION
 RALEIGH

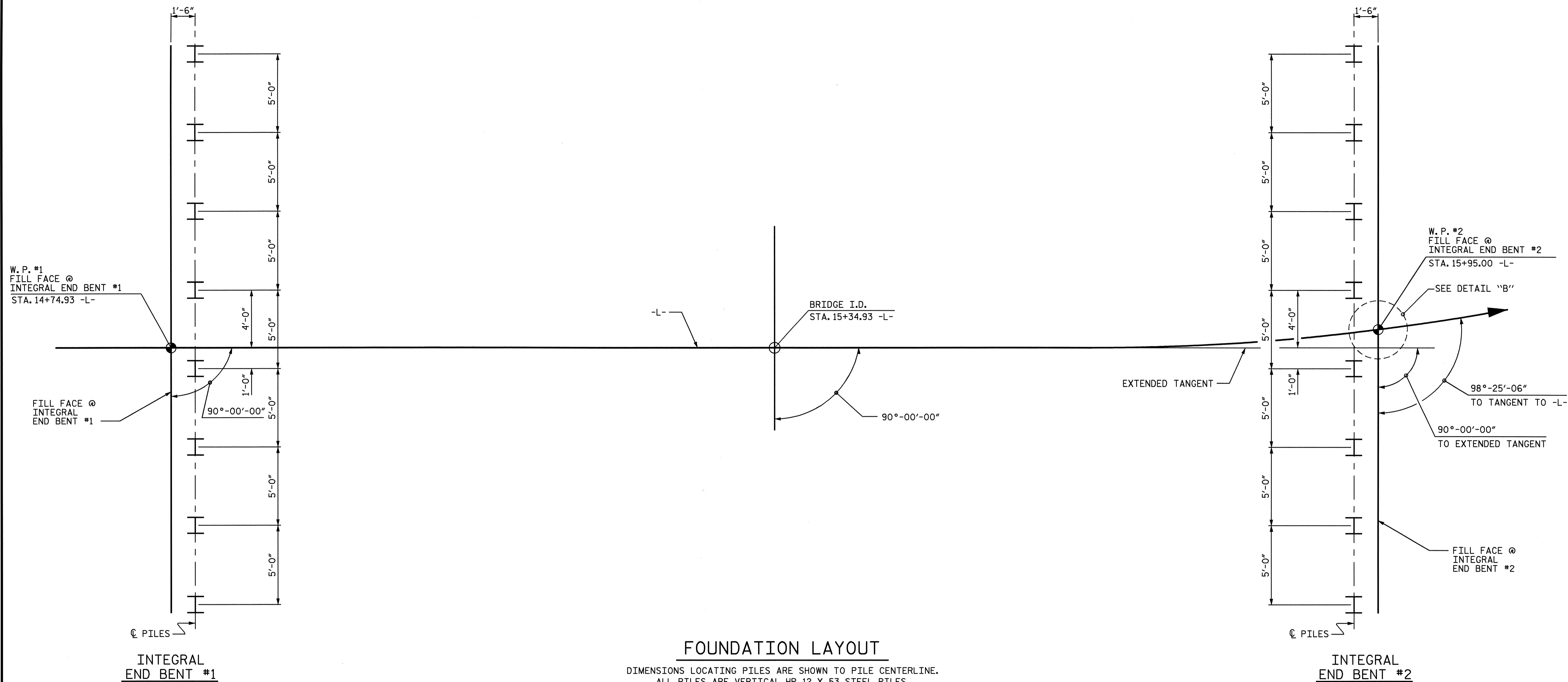
GENERAL DRAWING
 FOR BRIDGE OVER
 CATHEY'S CREEK ON SR 1549
 BETWEEN SR 1585
 AND SR 1538

REVISIONS				SHEET NO.
NO.	BY:	DATE:	NO.	DATE:
1			3	
2			4	

TOTAL SHEETS: 24

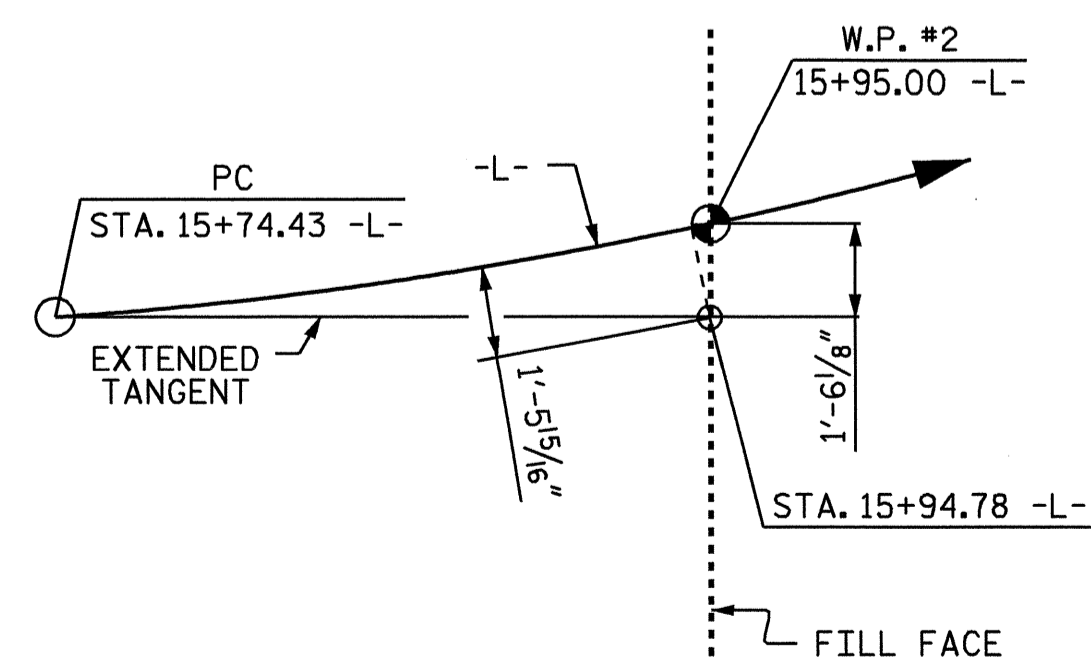
NORTH CAROLINA PROFESSIONAL ENGINEER SEAL 12274 ONAR R. RIZZ
 NORTH CAROLINA PROFESSIONAL ENGINEER SEAL 025516 EMILY E. MURRAY
 7/24/08

DRAWN BY: E. E. MURRAY DATE: 6-18-08
 CHECKED BY: T. L. AVERETTE DATE: 6-23-08



CONSTRUCTION SEQUENCE

1. DRIVE STEEL PILES FOR END BENT 1 AND END BENT 2. COMPLETE POUR 1 OF END BENTS.
2. ONCE CONCRETE HAS ATTAINED THE REQUIRED STRENGTH, INSTALL NUT, WASHER AND SOLE PLATE ON ANCHOR BOLTS. ERECT GIRDERS AND ALIGN SOLE PLATES WITH HOLES IN FLANGES REGARDLESS OF TEMPERATURE AT TIME OF SETTING. SOLE PLATE SHOULD BE WELDED TO THE GIRDER FLANGE BEFORE FALSEWORK IS PLACED. ADJUST LOWER NUT TO SET GIRDER BEARING AT THE PROPER ELEVATION. INSTALL WASHER AND NUT ON TOP OF FLANGES. LEAVE TOP NUT LOOSE TO ALLOW FOR GIRDER END ROTATION AND TRANSLATION DURING DECK POURING SEQUENCE.
3. POUR BRIDGE DECK IN ACCORDANCE WITH THE POURING SEQUENCE OUTLINED ON THE "SUPERSTRUCTURE BILL OF MATERIAL" SHEET EXCEPT THE FINAL TWO POURS CONTAINING THE ABUTMENT. NOTE THAT THE FINAL TWO POURS CONTAINING THE WING WALLS AND ABUTMENT ARE PLACED WITH THE FINAL POURS OF THE BRIDGE DECK.
4. TIGHTEN TOP NUTS 1/4 TURN PAST FINGER TIGHT. COMPLETE FINAL TWO DECK POURS WHICH INCLUDES THE ABUTMENT, DECK AND THE WING WALLS.
5. PLACE THE REINFORCED BRIDGE APPROACH FILL AND BACKFILL IN LIFTS UNTIL THE DESIRED SUBGRADE ELEVATION IS REACHED. CONSTRUCT SLEEPER SLABS.
6. POUR THE APPROACH SLABS STARTING AT THE END FURTHEST FROM THE BACK WALL AND PROGRESSING TOWARDS THE END BENT. POURS SHALL BE PERFORMED DURING THE MORNING HOURS TO MINIMIZE PLACING THE APPROACH SLAB IN TENSION FROM BRIDGE THERMAL MOVEMENTS.



DRAWN BY : E. E. MURRAY DATE : 6-18-08
CHECKED BY : T. L. AVERETTE DATE : 6-23-08

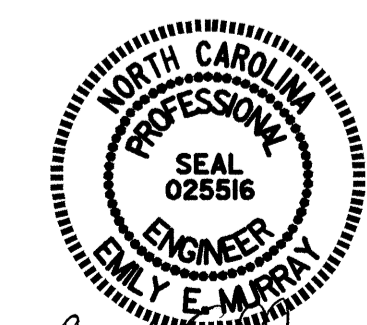
16-JUL-2008 10:25
g:\projects\164263\structures\finalplans\4263.sd.gdn
Taverette

PROJECT NO. B-4263
RUTHERFORD COUNTY
STATION: 15+34.93 -L-

SHEET 2 OF 3

STATE OF NORTH CAROLINA
DEPARTMENT OF TRANSPORTATION
RALEIGH

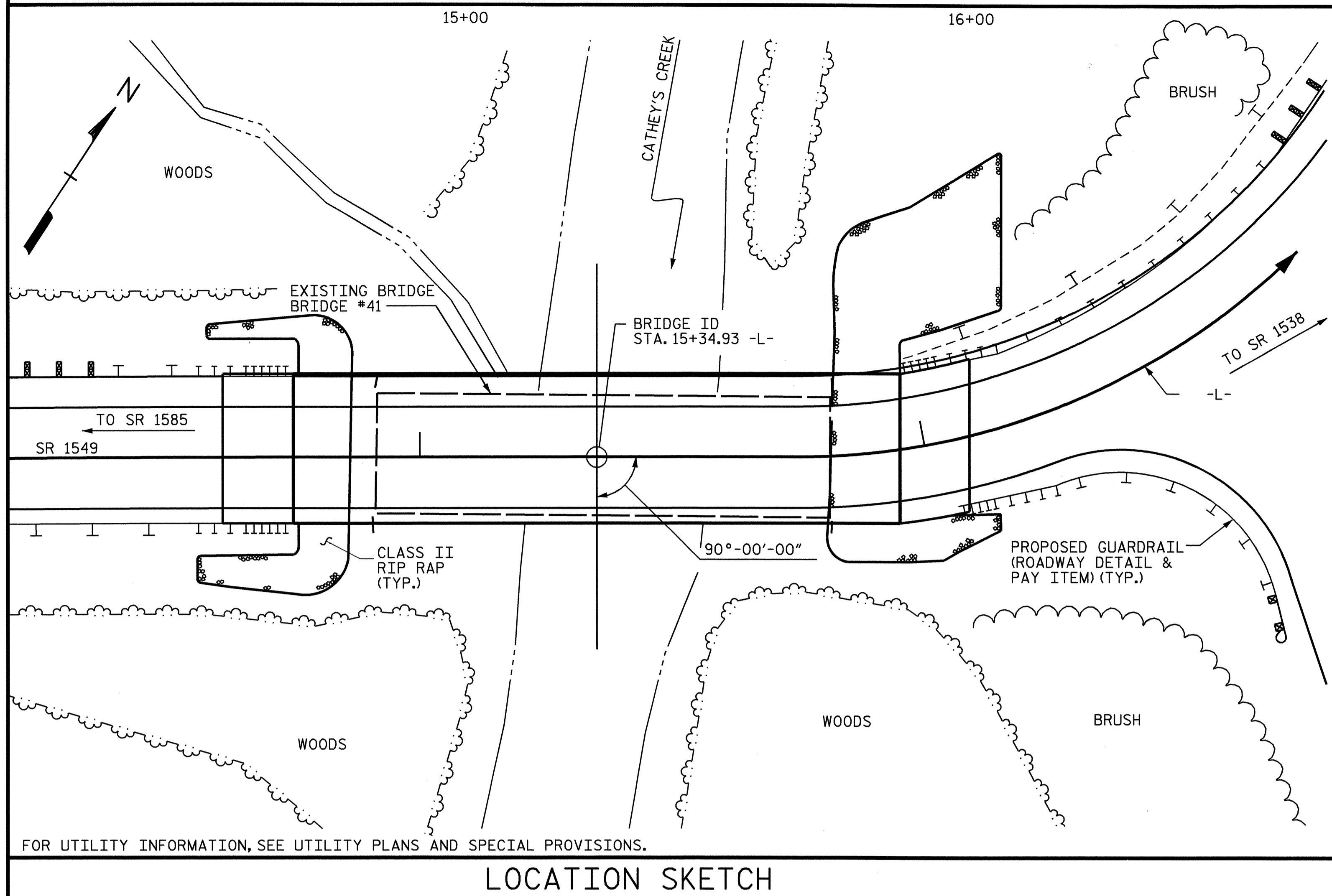
GENERAL DRAWING
FOR BRIDGE OVER
CATHEY'S CREEK ON SR 1549
BETWEEN SR 1585
AND SR 1538



Emily E. Murray
7/29/08

REVISIONS						SHEET NO.
NO.	BY:	DATE:	NO.	BY:	DATE:	S-2
1			3			TOTAL SHEETS
2			4			24

NCDD5



LOCATION SKETCH

TOTAL BILL OF MATERIAL

	REMOVAL OF EXISTING STRUCTURE	UNCLASSIFIED STRUCTURE EXCAVATION	REINFORCED CONCRETE DECK SLAB	GROOVING BRIDGE FLOORS	CLASS A CONCRETE	BRIDGE APPROACH SLABS	REINFORCING STEEL	STRUCTURAL STEEL	HP 12 X 53 STEEL PILES	CONCRETE BARRIER RAIL	RIP RAP CLASS II (2'-0" THICK)	FILTER FABRIC FOR DRAINAGE	EVAZOTE JOINT SEALS	
	LUMP SUM	LUMP SUM	SQ.FT.	SQ.FT.	CU.YDS.	LUMP SUM	LBS.	APPROX.LBS.	NO.	LIN.FT.	LIN.FT.	TON	SQ. YD.	LUMP SUM
SUPERSTRUCTURE			3870	3750		LUMP SUM		114,889		236.67				LUMP SUM
END BENT NO.1					17.0		3282		8	160		83	92	
END BENT NO.2					17.0		3296		8	240		224	248	
TOTAL	LUMP SUM	LUMP SUM	3870	3750	34.0	LUMP SUM	6578	114,889	16	400		307	340	LUMP SUM

NOTES:

ASSUMED LIVE LOAD = HS20 OR ALTERNATE LOADING, EXCEPT THE GIRDERS HAVE BEEN DESIGNED FOR HS25.

THIS BRIDGE HAS BEEN DESIGNED BY THE STRENGTH DESIGN METHOD AS SPECIFIED IN AASHTO STANDARD SPECIFICATIONS.

THIS BRIDGE HAS BEEN DESIGNED IN ACCORDANCE WITH THE REQUIREMENTS OF THE AASHTO STANDARD SPECIFICATIONS FOR SEISMIC DESIGN OF HIGHWAY BRIDGES FOR SEISMIC PERFORMANCE CATEGORY B.

FOR OTHER DESIGN DATA AND GENERAL NOTES, SEE SHEET SN.

FOR EROSION CONTROL MEASURES SEE EROSION CONTROL PLANS.

ALL STRUCTURAL STEEL SHALL BE AASHTO M270 GRADE 50W.

REMOVABLE FORMS MAY BE USED IN LIEU OF METAL STAY-IN-PLACE FORMS IN ACCORDANCE WITH ARTICLE 420-3 OF THE STANDARD SPECIFICATIONS.

THE EXISTING STRUCTURE CONSISTING OF THREE SPANS, 1 @ 30'-3", 1 @ 30'-1", AND 1 @ 30'-3" WITH A PRESTRESSED CONCRETE CHANNEL SUPERSTRUCTURE HAVING A CLEAR ROADWAY WIDTH OF 24.1' ON PRESTRESSED CONCRETE CAPS ON TIMBER PILES LOCATED AT THE SITE OF PROPOSED STRUCTURE SHALL BE REMOVED. THE EXISTING BRIDGE IS PRESENTLY POSTED BELOW THE LEGAL LOAD LIMIT. SEE SPECIAL PROVISION FOR REMOVAL OF EXISTING STRUCTURE.

REMOVAL OF THE EXISTING BRIDGE SHALL BE PERFORMED SO AS NOT TO ALLOW DEBRIS TO FALL INTO THE WATER. THE CONTRACTOR SHALL REMOVE THE BRIDGE AND SUBMIT PLANS FOR DEMOLITION IN ACCORDANCE WITH ARTICLE 402-2 OF THE STANDARD SPECIFICATIONS.

THE MATERIAL SHOWN IN THE CROSS-HATCHED AREA SHALL BE EXCAVATED FOR A DISTANCE OF 25 FT. EACH SIDE OF THE CENTERLINE ROADWAY AS DIRECTED BY THE ENGINEER. THIS WORK WILL BE PAID FOR AT THE CONTRACT LUMP SUM PRICE FOR UNCLASSIFIED STRUCTURE EXCAVATION. SEE SECTION 412 OF THE STANDARD SPECIFICATIONS.

THE SUBSTRUCTURE OF THE EXISTING BRIDGE INDICATED ON THE PLANS IS FROM THE BEST INFORMATION AVAILABLE. SINCE THIS INFORMATION IS SHOWN FOR THE CONVENIENCE OF THE CONTRACTOR, THE CONTRACTOR SHALL HAVE NO CLAIM WHATSOEVER AGAINST THE DEPARTMENT OF TRANSPORTATION FOR ANY DELAYS OR ADDITIONAL COST INCURRED BASED ON DIFFERENCES BETWEEN THE EXISTING BRIDGE SUBSTRUCTURE SHOWN ON THE PLANS AND THE ACTUAL CONDITIONS AT THE PROJECT SITE.

THE CLASS AA CONCRETE IN THE BRIDGE DECK SHALL CONTAIN FLY ASH OR GROUND GRANULATED BLAST FURNACE SLAG AT THE SUBSTITUTION RATE SPECIFIED IN ARTICLE 1024-1 AND IN ACCORDANCE WITH ARTICLES 1024-5 AND 1024-6 OF THE STANDARD SPECIFICATIONS. NO PAYMENT WILL BE MADE FOR THIS SUBSTITUTION AS IT IS CONSIDERED INCIDENTAL TO THE COST OF THE REINFORCED CONCRETE DECK SLAB.

THIS STRUCTURE HAS BEEN DESIGNED IN ACCORDANCE WITH HEC 18, "EVALUATING SCOUR AT BRIDGES", MAY, 2001.

THE CONTRACTOR SHALL PROVIDE INDEPENDENT ASSURANCE SAMPLES OF REINFORCING STEEL AS FOLLOWS: FOR PROJECTS REQUIRING UP TO 400 TONS OF REINFORCING STEEL, ONE 30 INCH SAMPLE OF EACH SIZE BAR USED, AND FOR PROJECTS REQUIRING OVER 400 TONS OF REINFORCING STEEL, TWO 30 INCH SAMPLES OF EACH SIZE BAR USED. THE BARS FROM WHICH THE SAMPLES ARE TAKEN MUST THEN BE SPLICED WITH REPLACEMENT BARS OF THE SIZE AND LENGTH OF THE SAMPLE, PLUS A MINIMUM LAP SPLICE OF THIRTY BAR DIAMETERS.

NEEDLE BEAMS WILL NOT BE ALLOWED UNLESS OTHERWISE CALLED FOR ON THE PLANS OR APPROVED BY THE ENGINEER.

FOR SUBMITTAL OF WORKING DRAWINGS, SEE SPECIAL PROVISIONS.

FOR FALSEWORK AND FORMWORK, SEE SPECIAL PROVISIONS.

FOR CRANE SAFETY, SEE SPECIAL PROVISIONS.

FOR GROUT FOR STRUCTURES, SEE SPECIAL PROVISIONS.

FOR SHIPPING STEEL STRUCTURAL MEMBERS, SEE SPECIAL PROVISIONS.

DRIVE PILES AT END BENT NO.1 AND END BENT NO.2 TO A REQUIRED BEARING CAPACITY OF 120 TONS PER PILE. THE REQUIRED BEARING CAPACITY IS EQUAL TO THE ALLOWABLE BEARING CAPACITY WITH A MINIMUM FACTOR OF SAFETY OF TWO.

THE ALLOWABLE BEARING CAPACITY FOR PILES AT END BENT NO.1 AND END BENT NO.2 IS 60 TONS PER PILE.

HYDRAULIC DATA

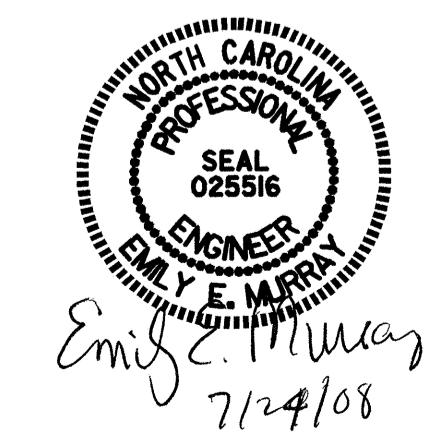
DESIGN DISCHARGE	= 5500 CFS.
FREQUENCY OF DESIGN FLOOD	= 25 YR.
DESIGN HIGH WATER ELEVATION	= 823.0 FT.
DRAINAGE AREA	= 44.0 SQ. MI.
BASIC DISCHARGE (Q100)	= 7900 CFS.
BASIC HIGH WATER ELEVATION	= 825.0 FT.

OVERTOPPING FLOOD DATA

OVERTOPPING DISCHARGE	= N/A
FREQUENCY OF OVERTOPPING FLOOD	= > 500 YR.
OVERTOPPING FLOOD ELEVATION	= 828.8 FT.

PROJECT NO. B-4263
RUTHERFORD COUNTY
 STATION: 15+34.93 -L-

SHEET 3 OF 3



STATE OF NORTH CAROLINA
 DEPARTMENT OF TRANSPORTATION
 RALEIGH

GENERAL DRAWING
 FOR BRIDGE OVER
 CATHEY'S CREEK ON SR 1549
 AND SR 1538

REVISIONS						SHEET NO.
NO.	BY:	DATE:	NO.	BY:	DATE:	S-3
1			3			TOTAL SHEETS 24
2			4			

DRAWN BY : E.E. MURRAY DATE : 6-18-08
 CHECKED BY : I.L. AVERETTE DATE : 6-23-08

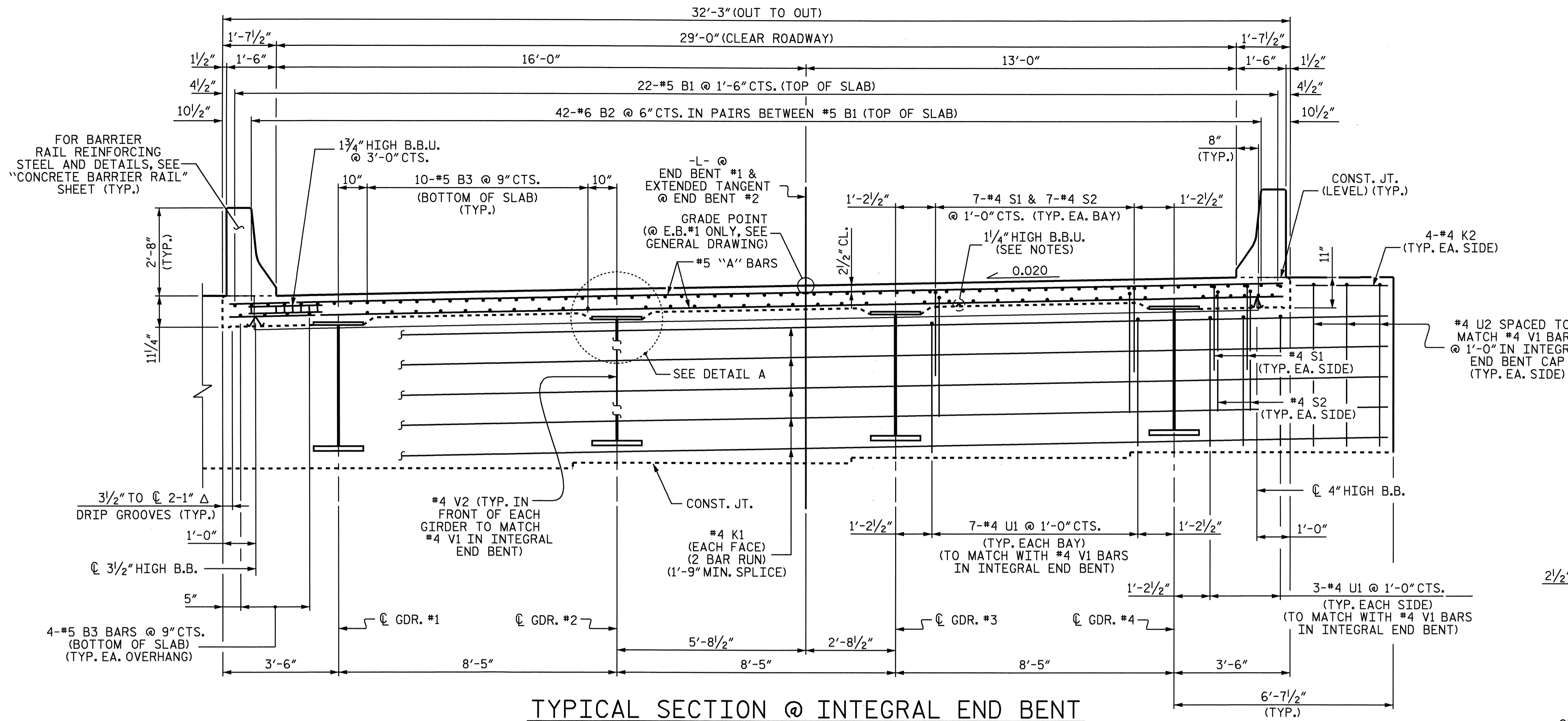
NOTES

PROVIDE 1/4" HIGH BEAM BOLSTERS UPPER AT 4'-0" CTS. ATOP THE METAL STAY-IN-PLACE FORMS TO SUPPORT THE BOTTOM MAT OF 'A' BARS. WHEN USING REMOVABLE FORMS, PROVIDE CONTINUOUS HIGH CHAIRS FOR METAL DECK (C.H.C.M.) @ 4'-0" CTS. WITH A HEIGHT TO SUPPORT THE BOTTOM MAT OF 'A' BARS A CLEAR DISTANCE OF 2 1/2" ABOVE THE TOP OF THE REMOVABLE FORM.

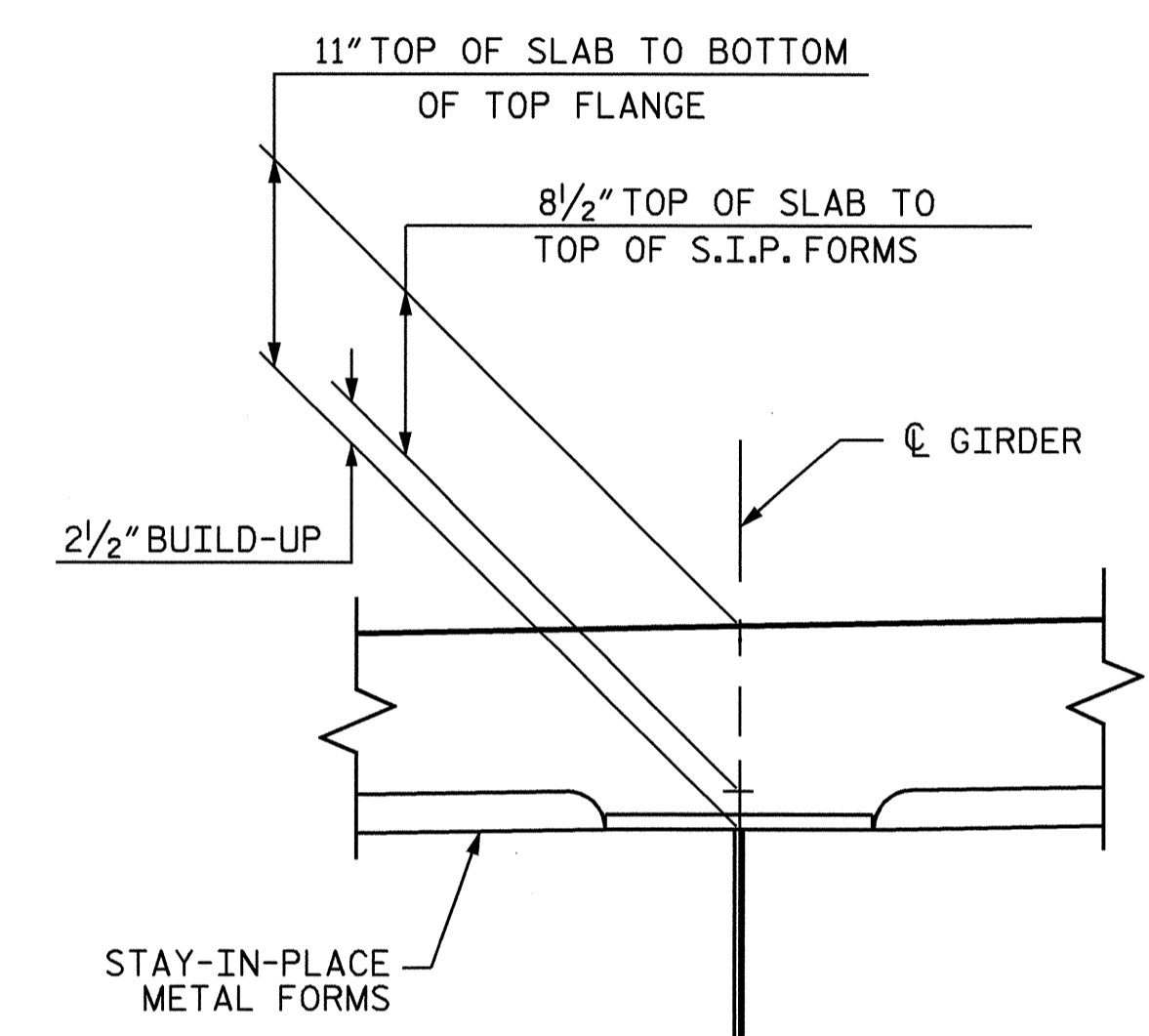
THE CONTRACTOR MAY, WHEN NECESSARY, PROPOSE A SCHEME FOR AVOIDING INTERFERENCE BETWEEN METAL STAY-IN-PLACE FORM SUPPORTS OR FORMS AND GIRDER STIFFENERS OR CONNECTOR PLATES. THE PROPOSAL SHALL BE INDICATED, AS APPROPRIATE, ON EITHER THE STEEL WORKING DRAWINGS OR THE METAL STAY-IN-PLACE FORM WORKING DRAWINGS.

BARRIER RAIL SHALL NOT BE CAST UNTIL ALL SLAB CONCRETE IN THE SPAN HAS BEEN CAST AND HAS REACHED A MINIMUM COMPRESSIVE STRENGTH OF 3,000 PSI.

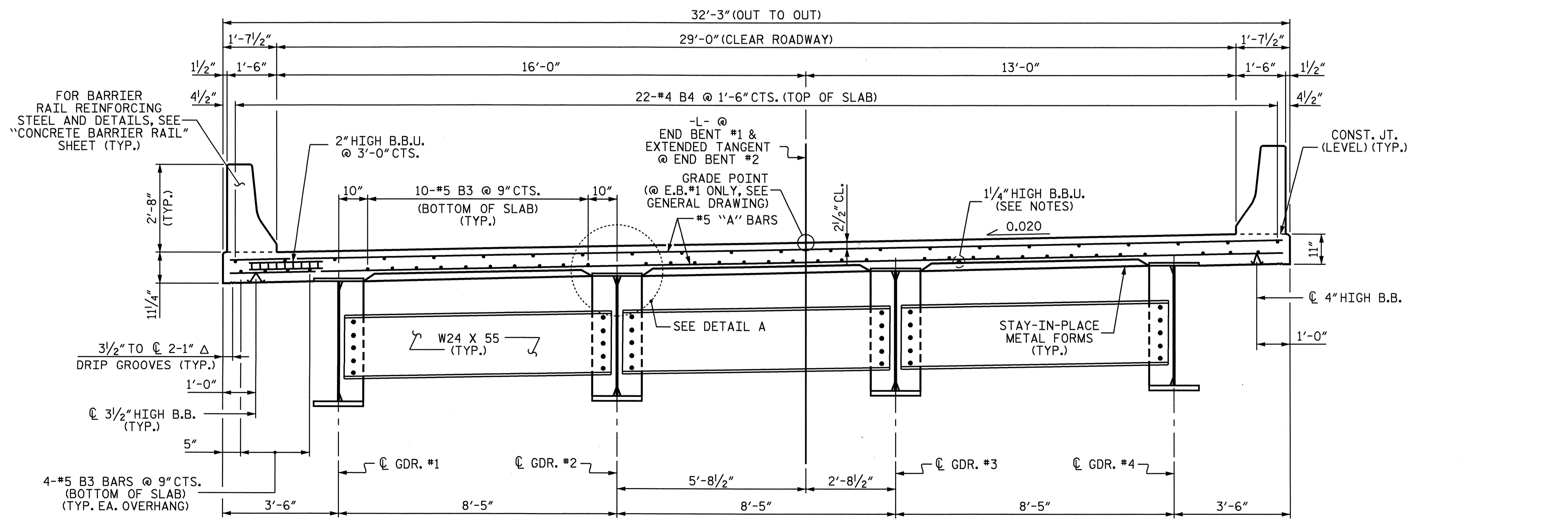
PREVIOUSLY CAST CONCRETE IN THE SLAB SHALL HAVE ATTAINED A MINIMUM COMPRESSIVE STRENGTH OF 3,000 PSI BEFORE ADDITIONAL CONCRETE IS CAST IN THE SLAB.



TYPICAL SECTION @ INTEGRAL END BENT



DETAIL A

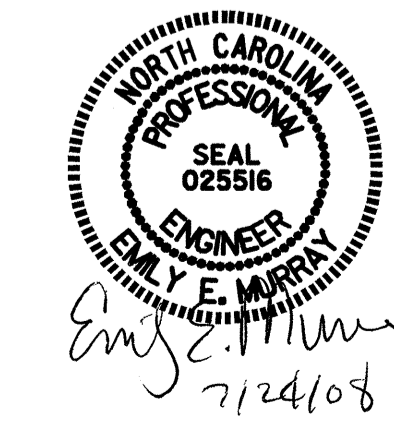


TYPICAL SECTION @ MIDSPAN SHOWING INTERMEDIATE DIAPHRAGM

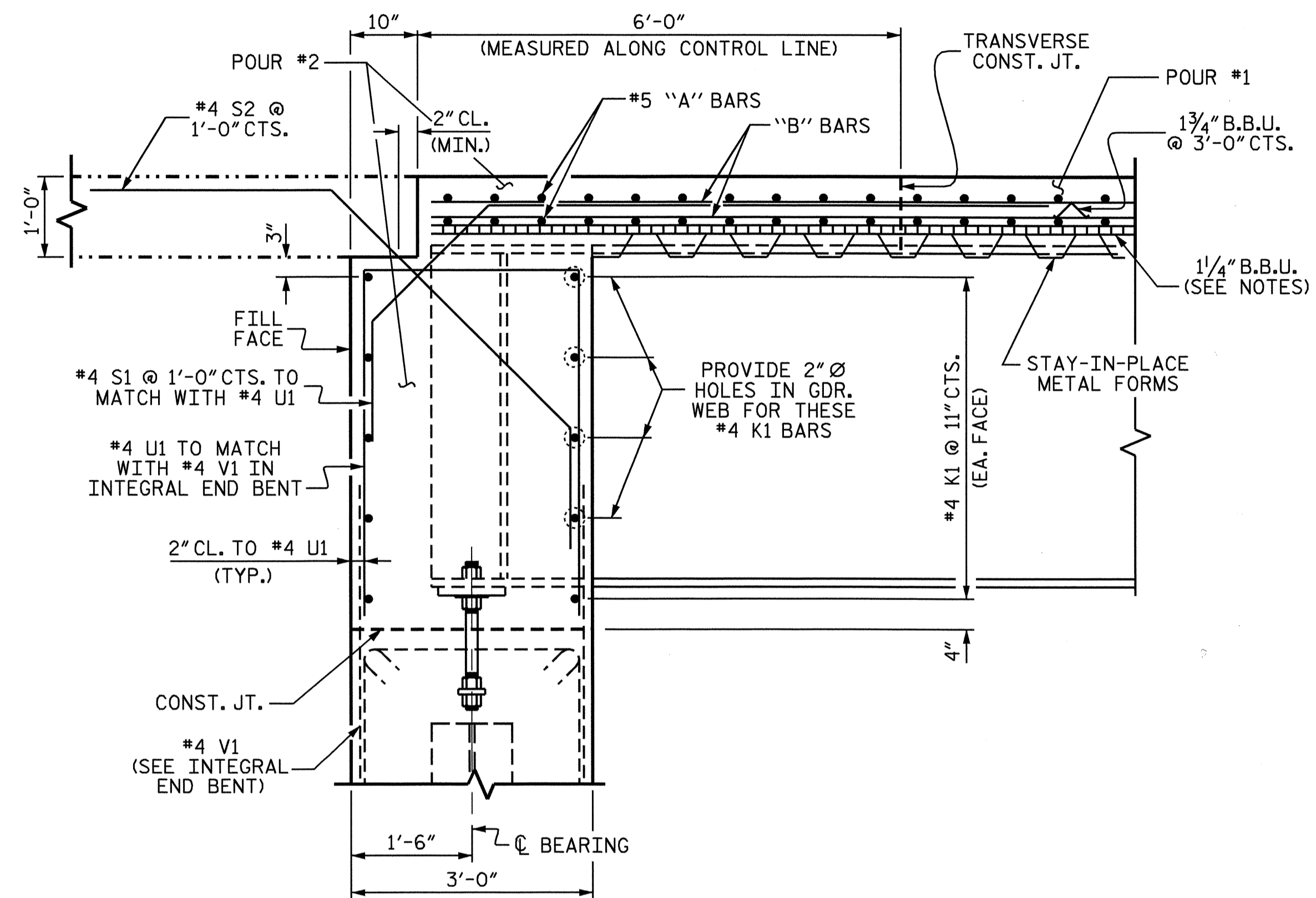
PROJECT NO. B-4263
RUTHERFORD COUNTY
 STATION: 15+34.93 -L-

SHEET 1 OF 2

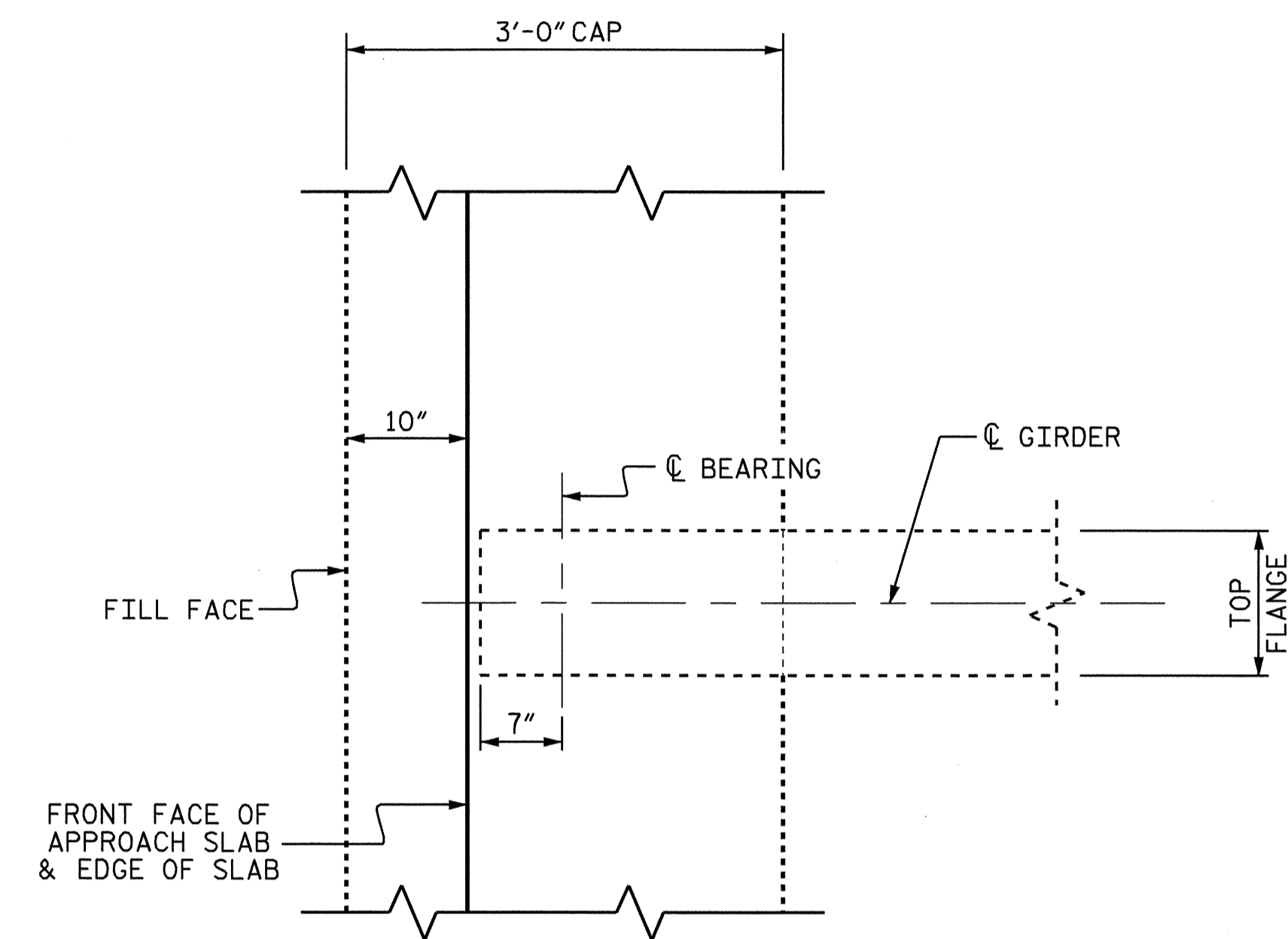
STATE OF NORTH CAROLINA DEPARTMENT OF TRANSPORTATION RALEIGH					
SUPERSTRUCTURE TYPICAL SECTIONS					
REVISIONS					SHEET NO.
NO.	BY:	DATE:	NO.	BY:	DATE:
1			3		
2			4		
					S-4
					TOTAL SHEETS 24



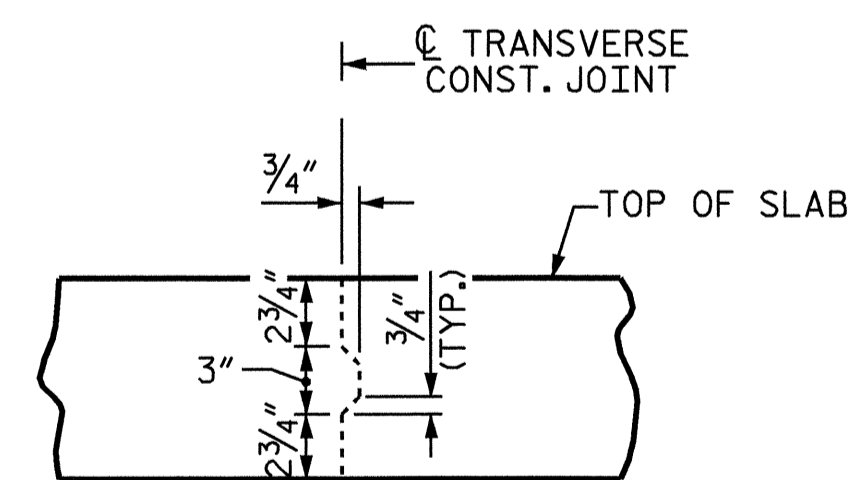
DRAWN BY: A. SORSENGINH DATE: 5/14/08
 CHECKED BY: I.L. COGGINS DATE: 6/13/08



END OF GIRDER DETAIL AT INTEGRAL END BENT



PLAN OF GIRDER AT INTEGRAL END BENT



TRANSVERSE CONSTRUCTION JOINT DETAIL

NOTE: REINFORCING STEEL IN SLAB NOT SHOWN. LONGITUDINAL REINFORCING STEEL SHALL BE CONTINUOUS THROUGH JOINT.

PROJECT NO. B-4263
RUTHERFORD COUNTY
 STATION: 15+34.93 -L-

SHEET 2 OF 2

STATE OF NORTH CAROLINA
 DEPARTMENT OF TRANSPORTATION
 RALEIGH

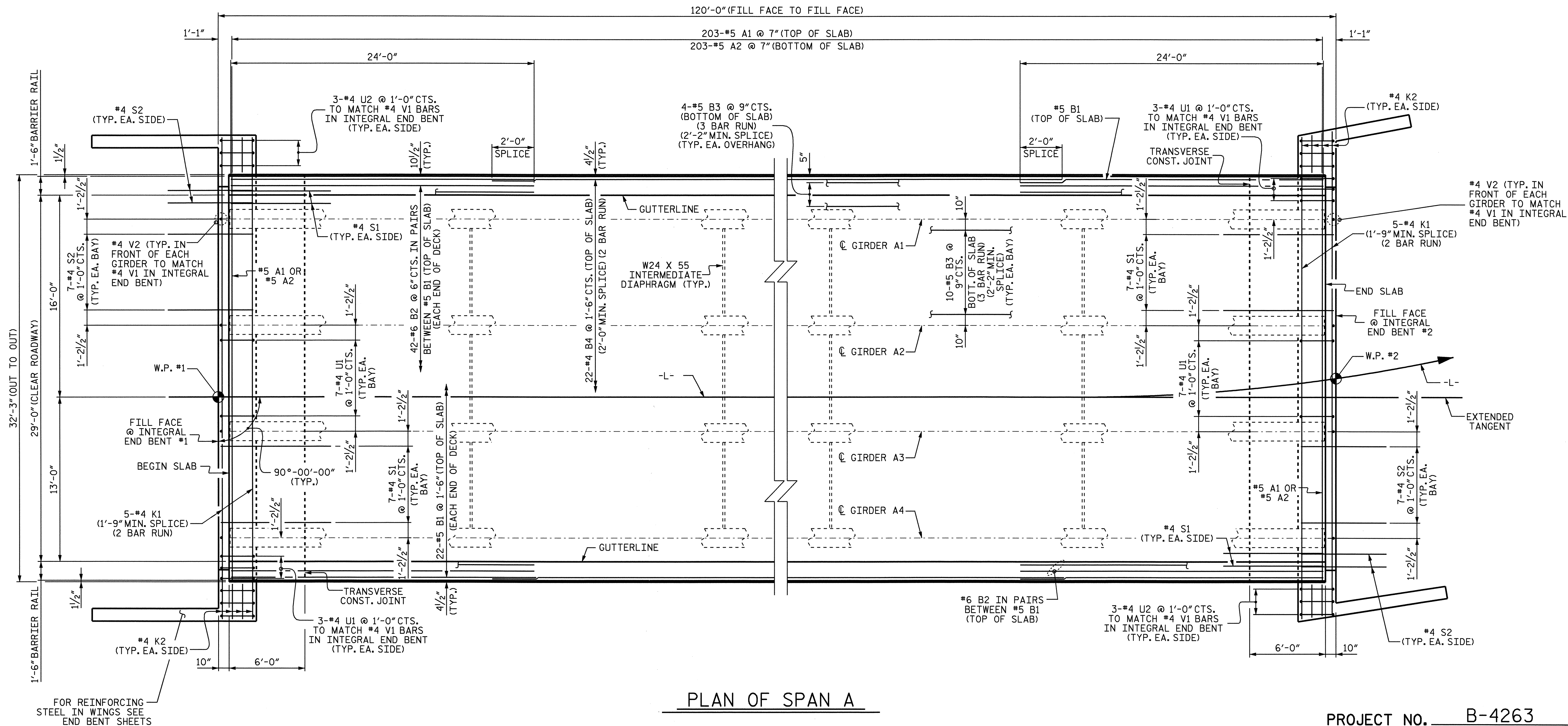
SUPERSTRUCTURE
 TYPICAL SECTION
 DETAILS



DRAWN BY : A. SORSENGINH DATE : 5/15/08
 CHECKED BY : T.L. COGGINS DATE : 6/13/08

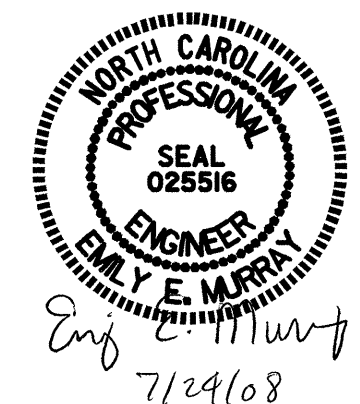
24-JUN-2008 14:32
 g:\flpprojects-b\4263\structures\finalplans\4263_sd_ts.dgn
 Taverette

REVISIONS						SHEET NO.
NO.	BY:	DATE:	NO.	BY:	DATE:	S-5
1			3			TOTAL SHEETS
2			4			24



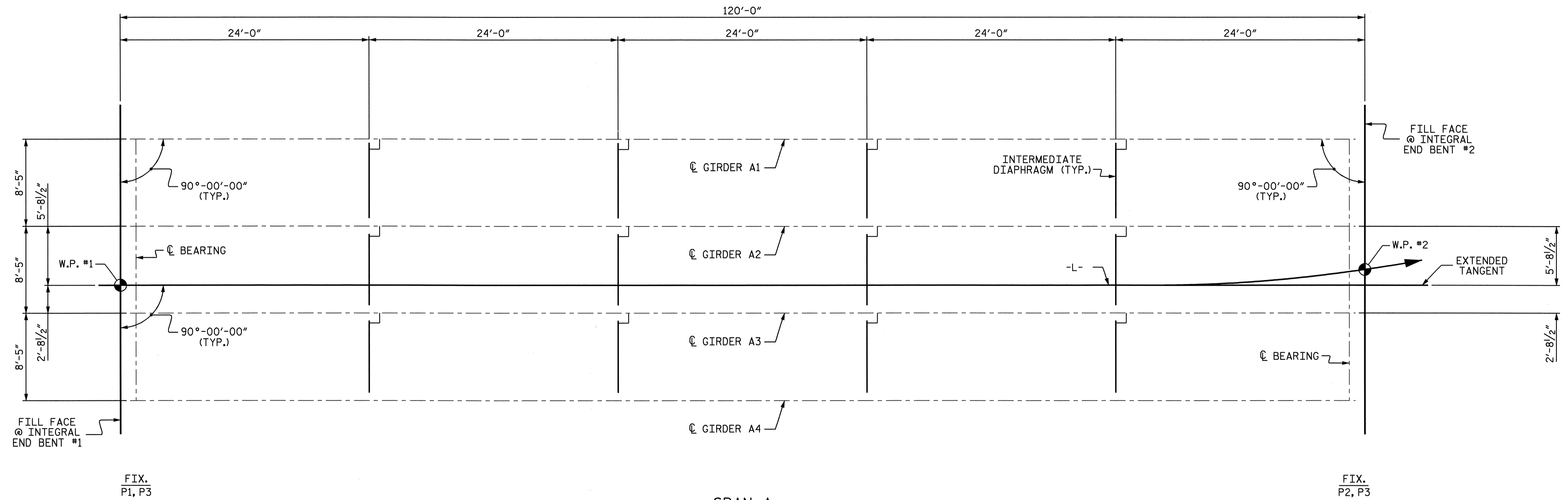
DRAWN BY: A. SORSENGINH DATE: 5/14/08
 CHECKED BY: T.L. COGGINS DATE: 6/13/08

16-JUL-2008 10:33
 g:\t\projects-b\b4263\structures\FINALPLANS\B4263.sd.s*.dgn
 Taverette



PROJECT NO. B-4263
RUTHERFORD COUNTY
 STATION: 15+34.93 -L-

STATE OF NORTH CAROLINA DEPARTMENT OF TRANSPORTATION RALEIGH					
SUPERSTRUCTURE PLAN OF SPAN A					
REVISIONS					SHEET NO. S-6
NO.	BY:	DATE:	NO.	BY:	
1			3		
2			4		
					TOTAL SHEETS 24



SPAN A

FRAMING PLAN

PROJECT NO. B-4263
RUTHERFORD COUNTY
 STATION: 15+34.93 -L-

STATE OF NORTH CAROLINA
 DEPARTMENT OF TRANSPORTATION
 RALEIGH

SUPERSTRUCTURE
 FRAMING PLAN



DRAWN BY : A. SORSENGINH DATE : 5/16/08
 CHECKED BY : T.L. COGGINS DATE : 6/18/08

16-JUL-2008 10:33
 g:\tpp\projects-b\4263\structures\FINALPLANS\B4263.sd.FP.dgn
 toverette

REVISIONS						SHEET NO.
NO.	BY:	DATE:	NO.	BY:	DATE:	S-7
1			3			TOTAL SHEETS
2			4			24

NOTES

- ALL STRUCTURAL STEEL SHALL BE AASHTO M270 GRADE 50W.
- ALL DIMENSIONS SHOWN ARE HORIZONTAL OR VERTICAL, UNLESS OTHERWISE NOTED.
- STUDS ON GIRDERS MAY BE SHIFTED UP TO 1" IF NECESSARY TO CLEAR FLANGE SPLICE WELD.
- SHOP SPLICES ARE PERMITTED TO LIMIT THE MAXIMUM REQUIRED FLANGE PIECE LENGTHS TO 60 FEET AND WEB PIECE LENGTHS TO 45 FEET. PERMITTED FLANGE AND WEB SHOP SPLICES SHALL NOT BE LOCATED WITHIN 15 FEET OF MAXIMUM DEAD LOAD DEFLECTION. KEEP 2 FEET MINIMUM BETWEEN WEB AND FLANGE SHOP SPLICES. KEEP 6" MINIMUM BETWEEN CONNECTOR PLATE, WEB OR FLANGE SHOP SPLICES.
- END OF GIRDERS SHALL BE PLUMB.
- FOR HIGH STRENGTH BOLTS, SEE SPECIAL PROVISIONS.
- FOR SHIPPING STEEL STRUCTURAL MEMBERS, SEE SPECIAL PROVISIONS.
- ALL FIELD CONNECTIONS TO BE 7/8" DIAMETER HIGH STRENGTH BOLTS UNLESS OTHERWISE NOTED.
- TENSION ON THE AASHTO M164 BOLTS SHALL BE CALIBRATED USING DIRECT TENSION INDICATOR WASHERS IN ACCORDANCE WITH ARTICLE 440-8 OF THE STANDARD SPECIFICATIONS.
- BEARING STIFFENERS ARE TO BE PLACED NORMAL TO THE WEB OF THE GIRDER AND SHALL BE PLUMB.

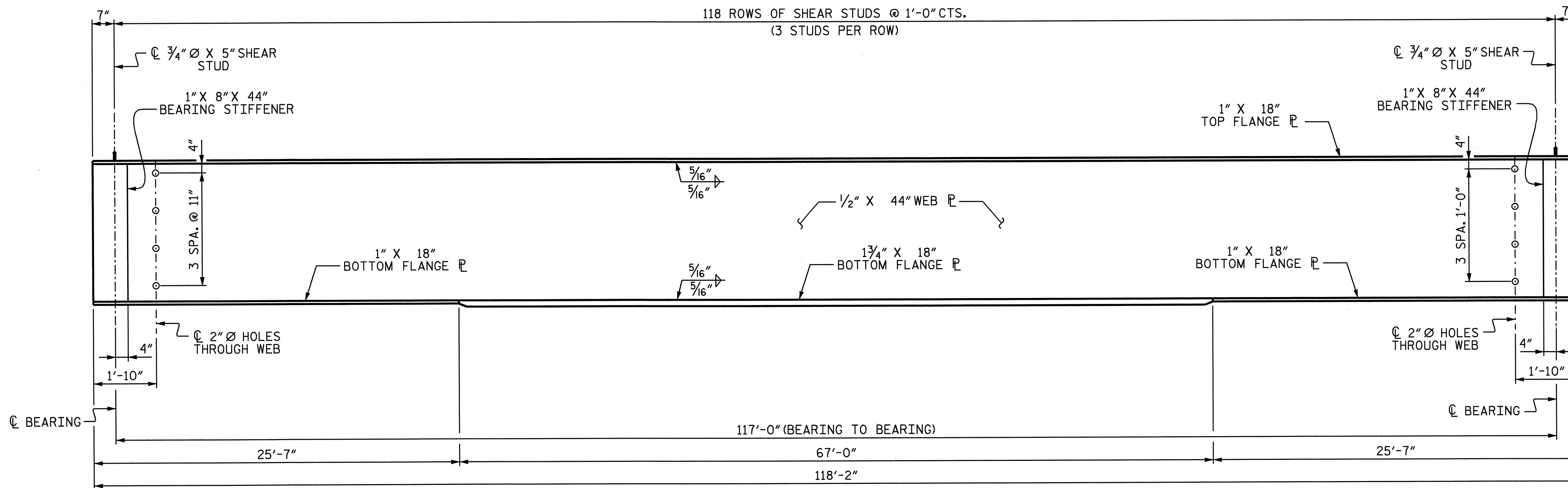
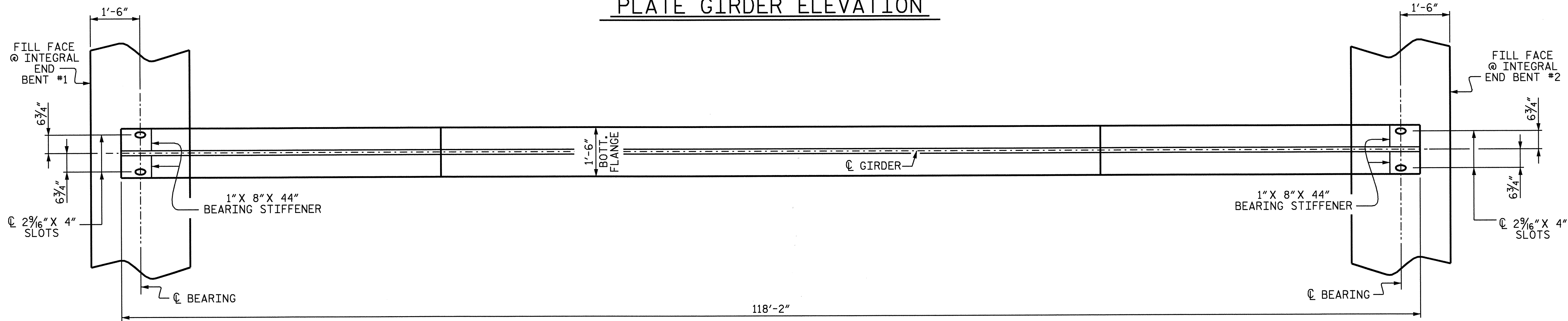
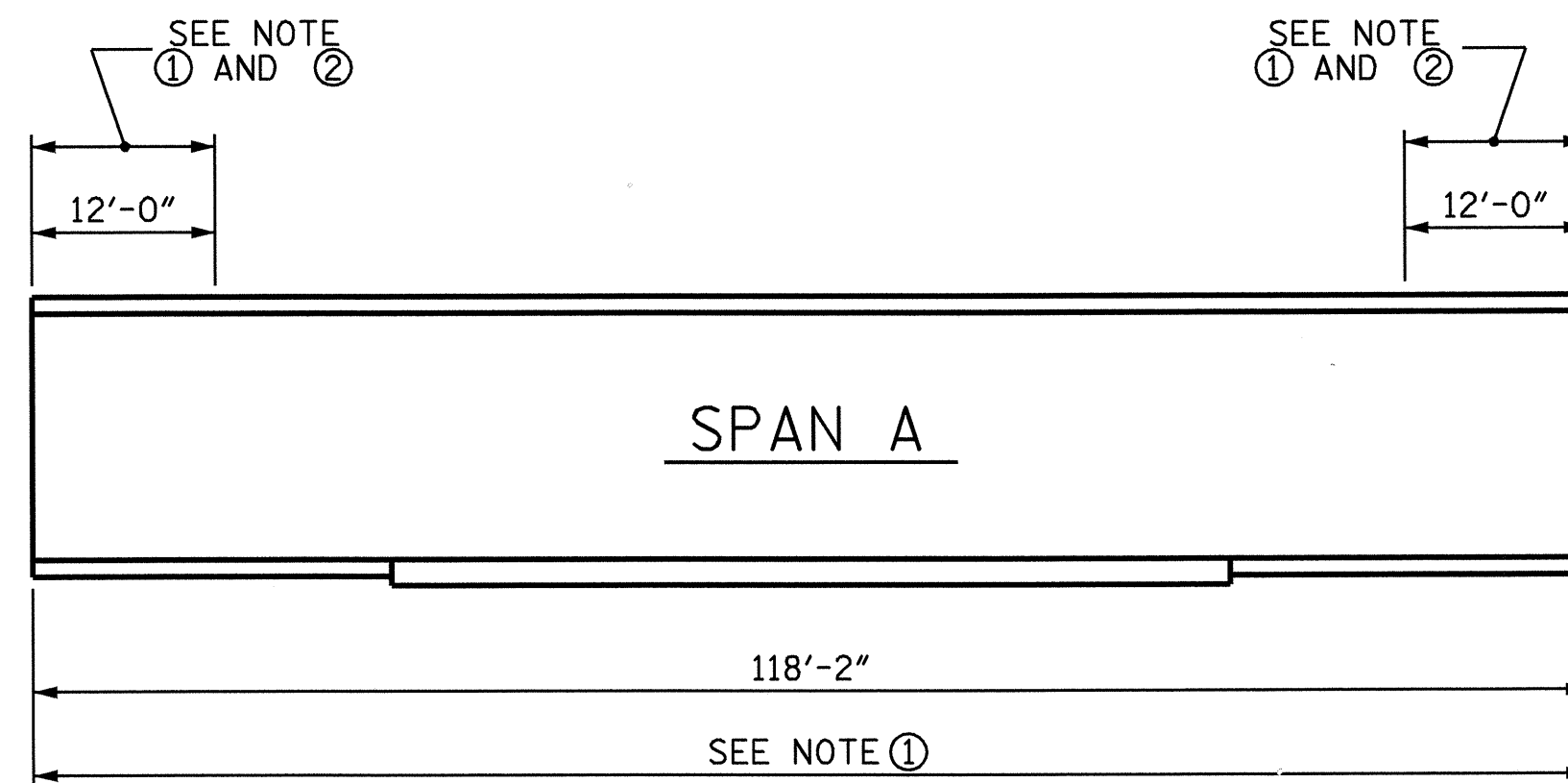


PLATE GIRDER ELEVATION



BOTTOM FLANGE DETAIL



GIRDER MAKE UP FOR CHARPY V-NOTCH TEST

- NOTE ①: CHARPY V-NOTCH TESTS ARE REQUIRED FOR TOP FLANGE PLATES WHICH FALL WITHIN THE LIMITS SHOWN, ALL BOTTOM FLANGE PLATES, ALL WEB PLATES, AND SPLICE PLATES. IF A PERMITTED SHOP FLANGE SPLICE IS NOT USED, CHARPY V-NOTCH TESTS WILL BE REQUIRED FOR THE ENTIRE FLANGE PLATE. FOR CHARPY V-NOTCH TESTS, SEE ARTICLE 1072-9 OF THE STANDARD SPECIFICATIONS.
- NOTE ②: NO WELDING OF FORMS OR FALSEWORK TO THE TOP FLANGE WILL BE PERMITTED IN THIS REGION.

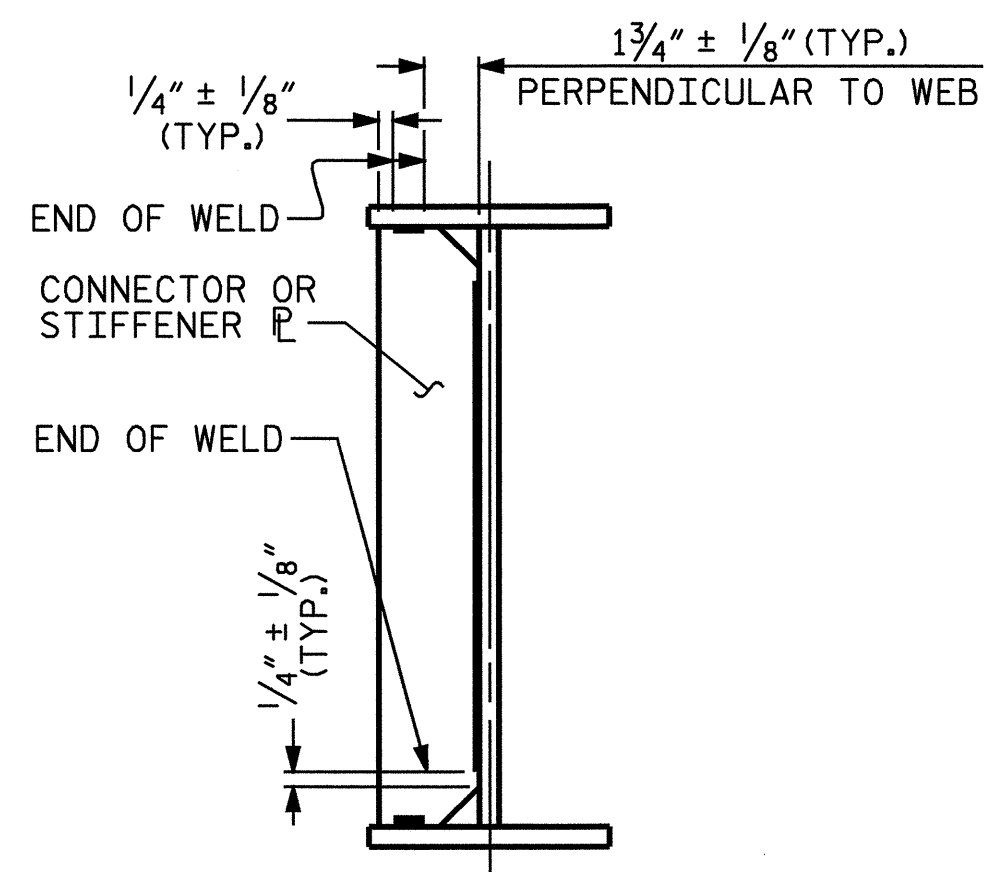


PROJECT NO. B-4263
RUTHERFORD COUNTY
 STATION: 15+34.93 -L-

SHEET 1 OF 2

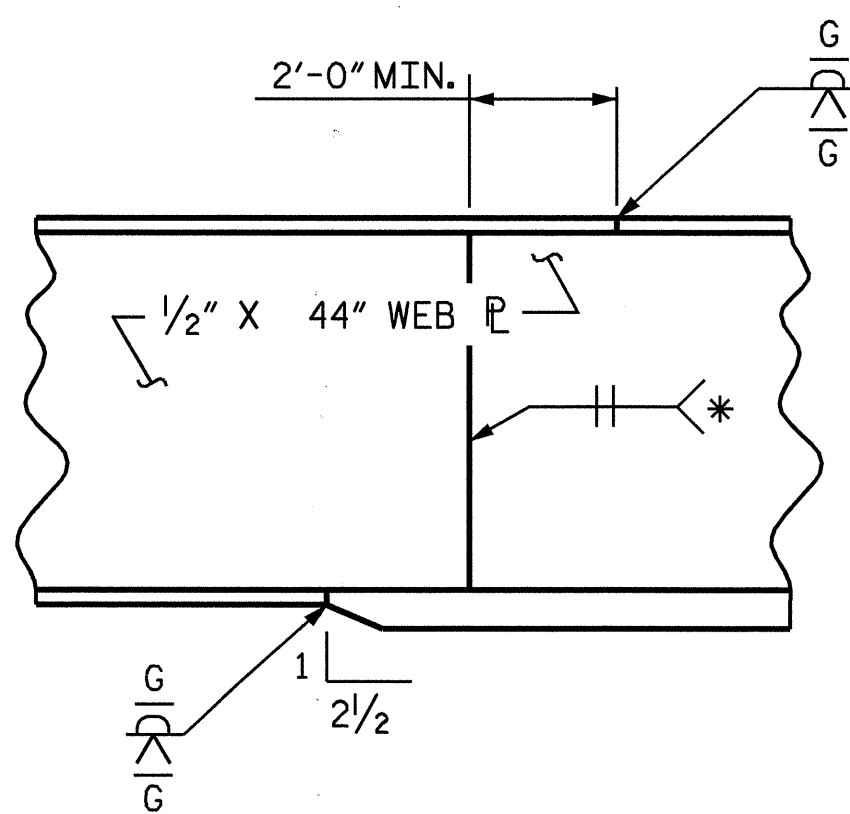
STATE OF NORTH CAROLINA DEPARTMENT OF TRANSPORTATION RALEIGH					
SUPERSTRUCTURE STRUCTURAL STEEL DETAILS					
REVISIONS					SHEET NO.
NO.	BY:	DATE:	NO.	BY:	DATE:
1			3		
2			4		
					S-8
					TOTAL SHEETS 24

DRAWN BY: A. SORSENGINH DATE: 5/16/08
 CHECKED BY: T.L. COGGINS DATE: 6/20/08



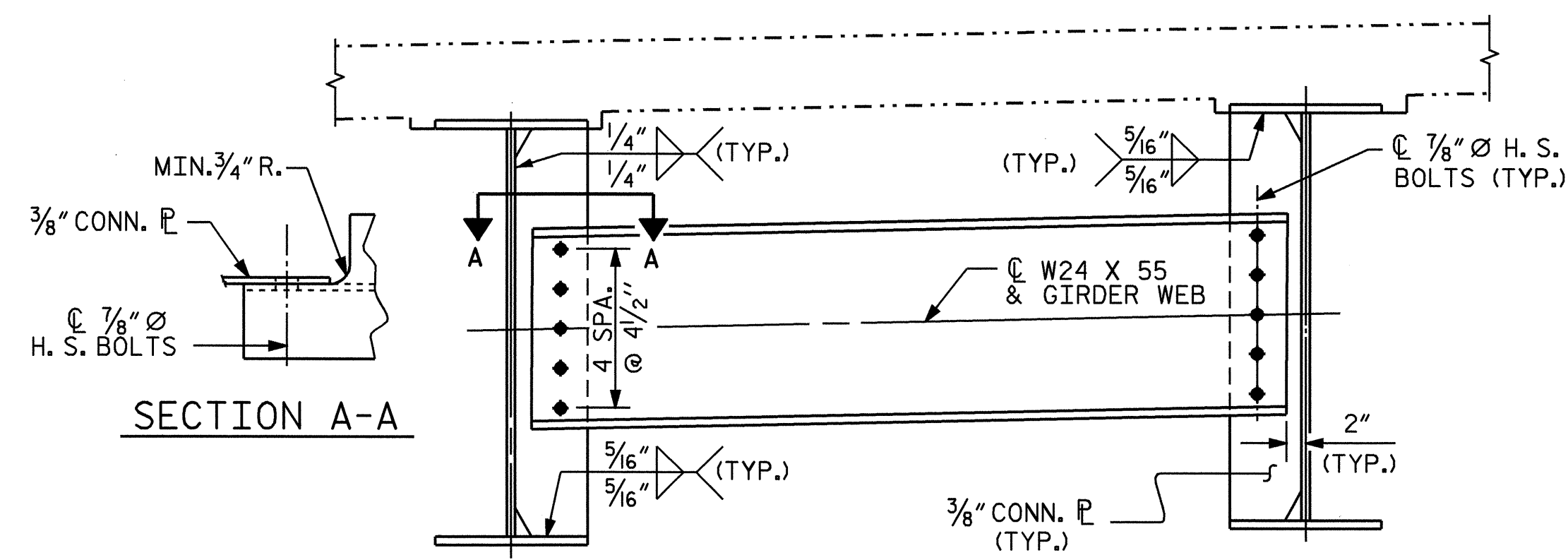
TYPICAL STIFFENER OR
CONNECTOR PLATE CONNECTIONS

WELD TERMINATION DETAILS

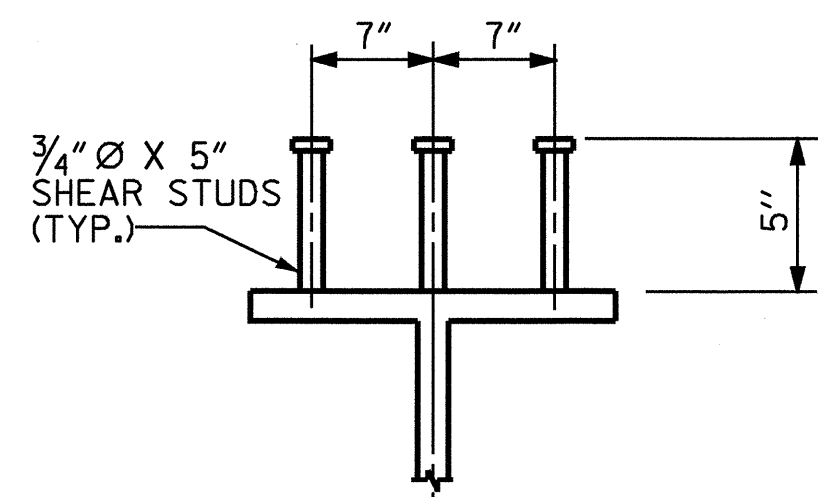


TYPICAL FLANGE AND WEB BUTT JOINT

* GRIND SMOOTH AND FLUSH ON OUTSIDE OF EXTERIOR GIRDERS

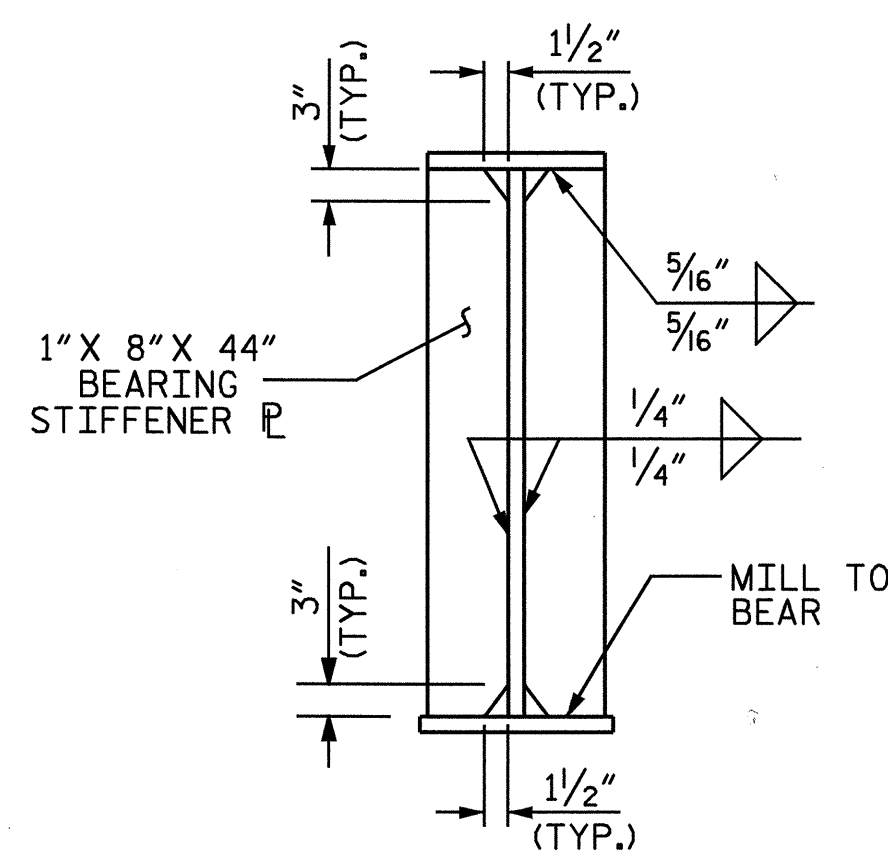


TYPICAL INTERMEDIATE DIAPHRAGM

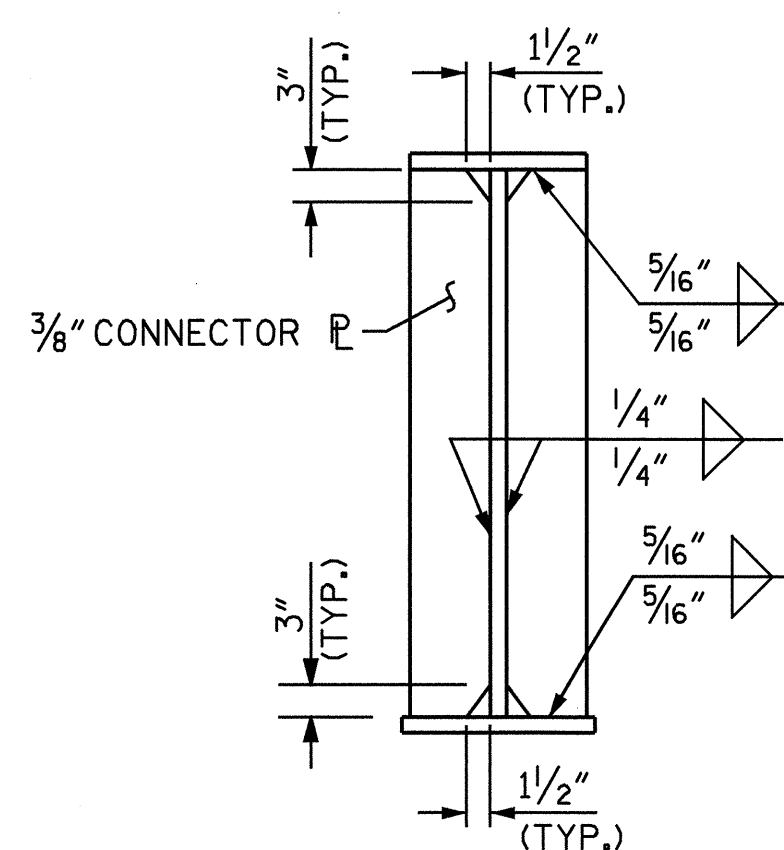


SHEAR STUD DETAIL

(TYP. EA. GIRDER)



BEARING STIFFENER



CONNECTOR PLATE DETAILS

PROJECT NO. B-4263
RUTHERFORD COUNTY
 STATION: 15+34.93 -L-

SHEET 2 OF 2

STATE OF NORTH CAROLINA
 DEPARTMENT OF TRANSPORTATION
 RALEIGH

SUPERSTRUCTURE
 STRUCTURAL STEEL
 DETAILS



DRAWN BY : A. SORSENGINH DATE : 5/16/08
 CHECKED BY : T.L. COGGINS DATE : 6/20/08

24-JUN-2008 15:23
 g:\t\p\projects-b\4263\structures\finalplans\B-4263.sd.g*.dgn
 raverette

REVISIONS						SHEET NO.
NO.	BY:	DATE:	NO.	BY:	DATE:	S-9
1			3			TOTAL SHEETS
2			4			24

STR. #1

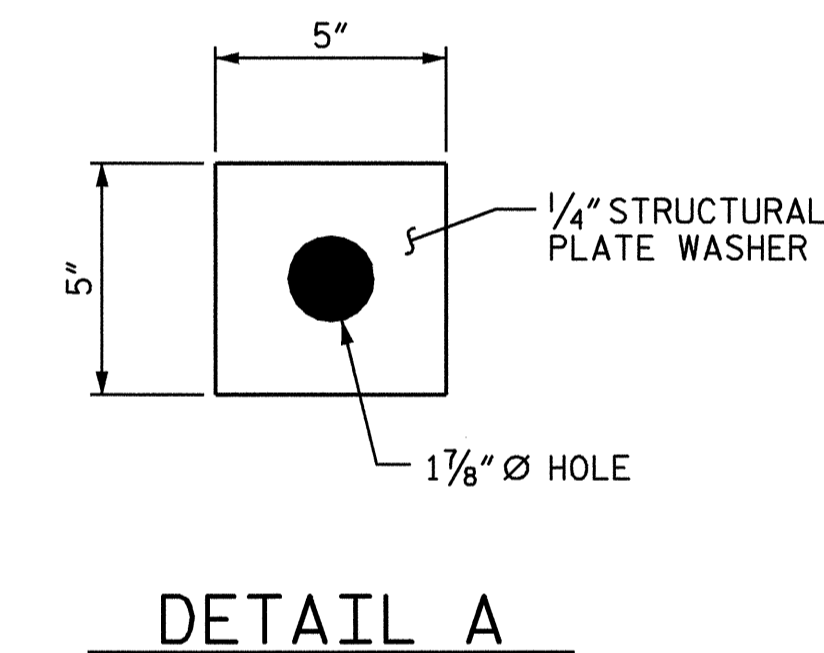
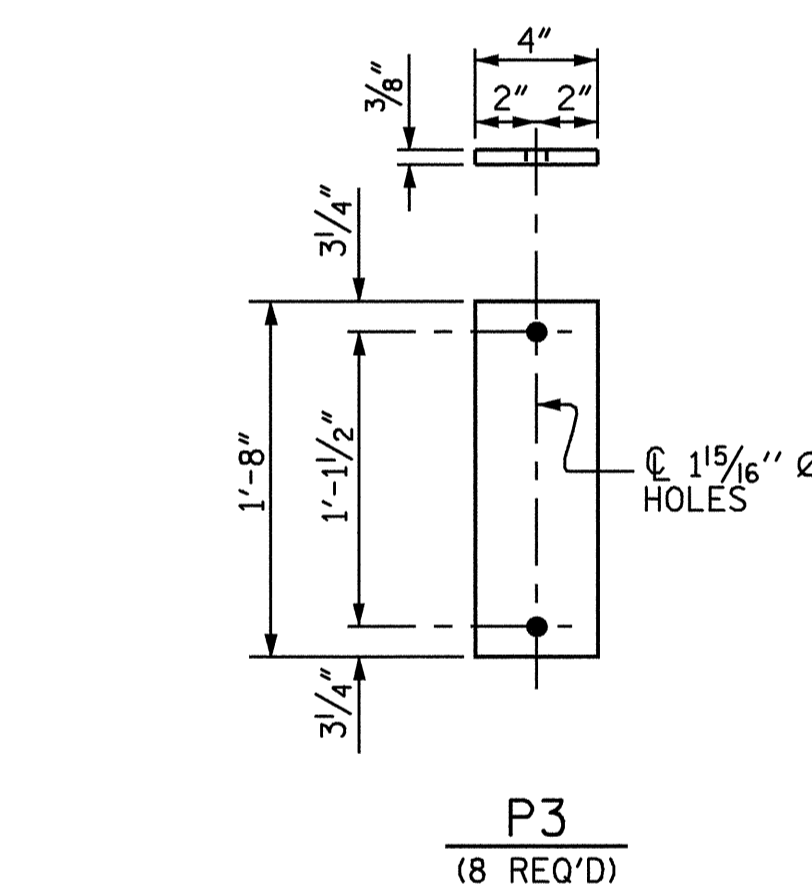
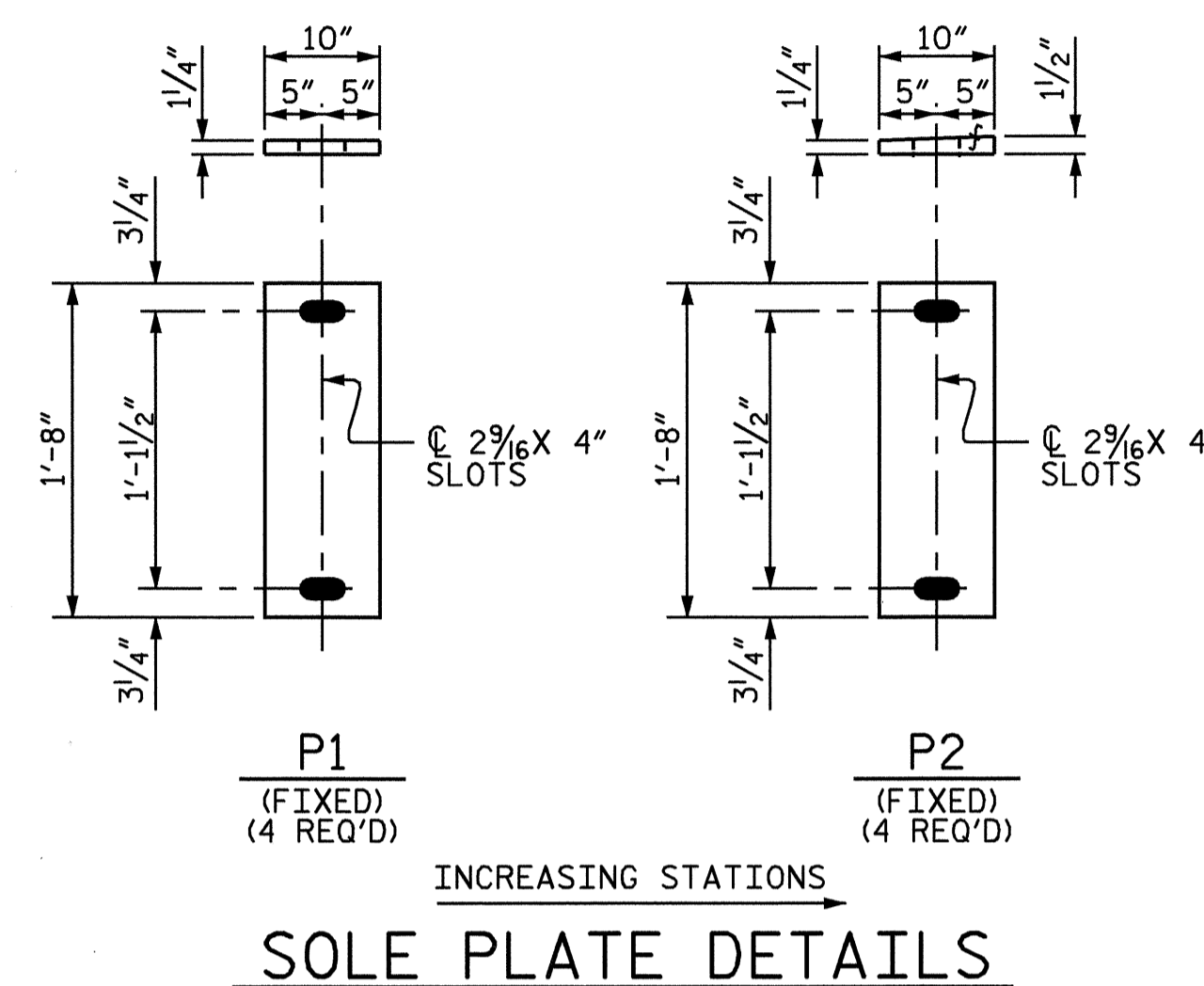
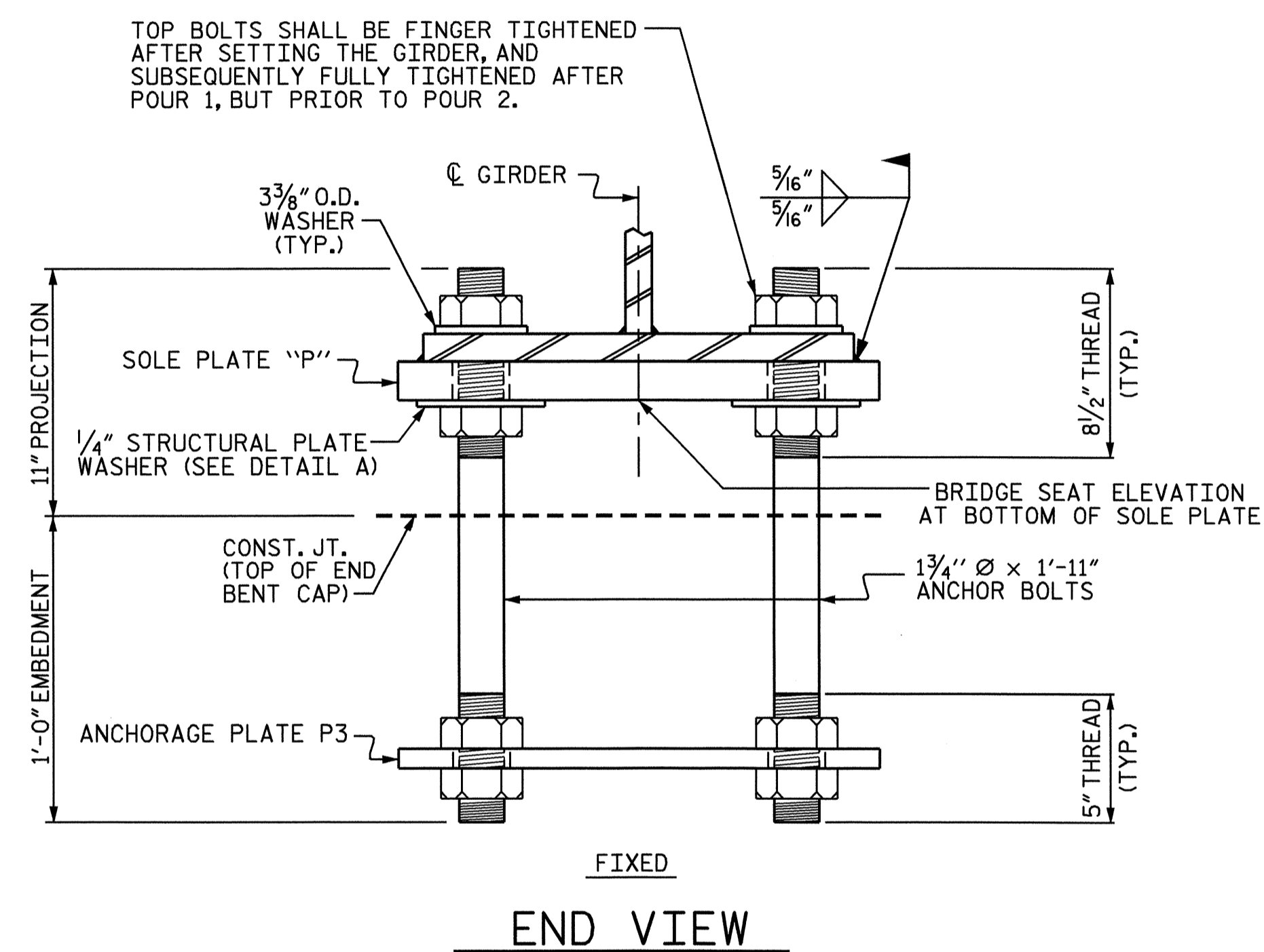
NOTES

FOR AASHTO M270 GRADE 50W STRUCTURAL STEEL, SOLE PLATE SHALL BE AASHTO M270 GRADE 50W AND SHALL NOT BE GALVANIZED. ANCHOR BOLTS, NUTS AND WASHERS SHALL BE GALVANIZED IN ACCORDANCE WITH THE STANDARD SPECIFICATIONS.

ANCHOR BOLTS SHALL MEET THE REQUIREMENTS OF ASTM A449. NUTS SHALL MEET THE REQUIREMENTS OF AASHTO M291-DH OR AASHTO M292-2H. WASHERS SHALL MEET THE REQUIREMENTS OF AASHTO M293. SHOP DRAWINGS ARE NOT REQUIRED FOR ANCHOR BOLTS, NUTS AND WASHERS. SHOP INSPECTION IS REQUIRED.

ALL SURFACES OF SOLE PLATES SHALL BE SMOOTH AND STRAIGHT.

STRUCTURAL PLATE WASHER SHALL BE AASHTO M270 GRADE 50W AND SHALL NOT BE GALVANIZED.



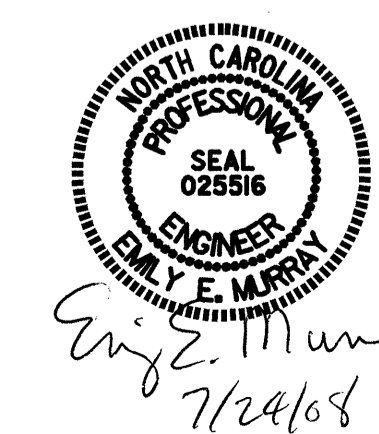
DRAWN BY: A. SORSENGINH DATE: 5/19/08
CHECKED BY: T.L. COGGINS DATE: 6/17/08

24-JUN-2008 15:25
g:\h\projects-b\4263\structures\finalplans\4263.sd.bg.dgn
Taverette

PROJECT NO. B-4263
RUTHERFORD COUNTY
STATION: 15+34.93 -L-

STATE OF NORTH CAROLINA
DEPARTMENT OF TRANSPORTATION
RALEIGH

SUPERSTRUCTURE
BEARING DETAILS



REVISIONS						SHEET NO.
NO.	BY:	DATE:	NO.	BY:	DATE:	S-10
1			3			TOTAL SHEETS
2			4			24

DEAD LOAD DEFLECTION TABLE FOR GIRDERS

EXTERIOR GIRDERS																					
GIRDER 1																					
TWENTIETH POINTS	0	.05	.1	.15	.2	.25	.3	.35	.4	.45	.5	.55	.6	.65	.7	.75	.8	.85	.9	.95	0
DEFLECTION DUE TO WEIGHT OF GIRDER ↓	0.0	0.019	0.037	0.055	0.070	0.083	0.095	0.104	0.110	0.114	0.116	0.114	0.110	0.104	0.095	0.083	0.070	0.055	0.037	0.019	0.0
* DEFLECTION DUE TO WEIGHT OF SLAB ↓	0.0	0.065	0.142	0.214	0.278	0.334	0.382	0.420	0.447	0.464	0.470	0.464	0.447	0.420	0.382	0.334	0.278	0.214	0.142	0.065	0.0
DEFLECTION DUE TO WEIGHT OF BARRIER RAIL ↓	0.0	0.008	0.017	0.024	0.031	0.037	0.042	0.045	0.048	0.050	0.051	0.050	0.048	0.045	0.042	0.037	0.031	0.024	0.017	0.008	0.0
TOTAL DEAD LOAD DEFLECTION ↓	0.0	0.092	0.196	0.293	0.379	0.454	0.519	0.569	0.605	0.628	0.637	0.628	0.605	0.569	0.519	0.454	0.379	0.293	0.196	0.092	0.0
VERTICAL CURVE ORDINATE (SAG) ↑	0.0	-0.019	-0.039	-0.058	-0.078	-0.097	-0.117	-0.136	-0.156	-0.175	-0.194	-0.214	-0.233	-0.253	-0.266	-0.266	-0.253	-0.225	-0.170	-0.095	0.0
REQUIRED CAMBER ↑	0	7/8"	1 1/8"	2 1/16"	3 5/16"	4 5/16"	4 13/16"	5 3/16"	5 3/8"	5 1/2"	5 5/16"	4 15/16"	4 7/16"	3 13/16"	3 1/16"	2 1/4"	1 1/2"	1 3/16"	5/16"	0	0
GIRDER 4																					
TWENTIETH POINTS	0	.05	.1	.15	.2	.25	.3	.35	.4	.45	.5	.55	.6	.65	.7	.75	.8	.85	.9	.95	0
DEFLECTION DUE TO WEIGHT OF GIRDER ↓	0.0	0.019	0.037	0.055	0.070	0.083	0.095	0.104	0.110	0.114	0.116	0.114	0.110	0.104	0.095	0.083	0.070	0.055	0.037	0.019	0.0
* DEFLECTION DUE TO WEIGHT OF SLAB ↓	0.0	0.065	0.142	0.214	0.278	0.334	0.382	0.420	0.447	0.464	0.470	0.464	0.447	0.420	0.382	0.334	0.278	0.214	0.142	0.065	0.0
DEFLECTION DUE TO WEIGHT OF BARRIER RAIL ↓	0.0	0.008	0.017	0.024	0.031	0.037	0.042	0.045	0.048	0.050	0.051	0.050	0.048	0.045	0.042	0.037	0.031	0.024	0.017	0.008	0.0
TOTAL DEAD LOAD DEFLECTION ↓	0.0	0.092	0.196	0.293	0.379	0.454	0.519	0.569	0.605	0.628	0.637	0.628	0.605	0.569	0.519	0.454	0.379	0.293	0.196	0.092	0.0
VERTICAL CURVE ORDINATE (SAG) ↑	0.0	-0.015	-0.031	-0.046	-0.061	-0.076	-0.092	-0.107	-0.122	-0.137	-0.153	-0.168	-0.183	-0.198	-0.207	-0.203	-0.186	-0.158	-0.120	-0.068	0.0
REQUIRED CAMBER ↑	0	1 5/16"	2"	2 15/16"	3 13/16"	4 9/16"	5 1/8"	5 9/16"	5 3/16"	5 7/8"	5 3/16"	5 1/2"	5 1/16"	4 7/16"	3 3/4"	3"	2 5/16"	1 5/8"	1 5/16"	5/16"	0
INTERIOR GIRDERS																					
GIRDER 2																					
TWENTIETH POINTS	0	.05	.1	.15	.2	.25	.3	.35	.4	.45	.5	.55	.6	.65	.7	.75	.8	.85	.9	.95	0
DEFLECTION DUE TO WEIGHT OF GIRDER ↓	0.0	0.019	0.037	0.055	0.070	0.083	0.095	0.104	0.110	0.114	0.116	0.114	0.110	0.104	0.095	0.083	0.070	0.055	0.037	0.019	0.0
* DEFLECTION DUE TO WEIGHT OF SLAB ↓	0.0	0.066	0.145	0.218	0.283	0.340	0.389	0.427	0.455	0.473	0.478	0.473	0.455	0.427	0.389	0.340	0.283	0.218	0.145	0.066	0.0
DEFLECTION DUE TO WEIGHT OF BARRIER RAIL ↓	0.0	0.008	0.016	0.023	0.030	0.036	0.041	0.044	0.047	0.049	0.049	0.049	0.047	0.044	0.041	0.036	0.030	0.023	0.016	0.008	0.0
TOTAL DEAD LOAD DEFLECTION ↓	0.0	0.093	0.198	0.296	0.383	0.459	0.525	0.575	0.612	0.636	0.643	0.636	0.612	0.575	0.525	0.459	0.383	0.296	0.198	0.093	0.0
VERTICAL CURVE ORDINATE (SAG) ↑	0.0	-0.018	-0.036	-0.054	-0.071	-0.089	-0.107	-0.125	-0.143	-0.161	-0.179	-0.196	-0.214	-0.232	-0.244	-0.242	-0.228	-0.200	-0.151	-0.084	0.0
REQUIRED CAMBER ↑	0	7/8"	1 1/16"	2 1/16"	3 3/4"	4 7/16"	5"	5 3/8"	5 5/8"	5 11/16"	5 9/16"	5 1/4"	4 3/4"	4 1/8"	3 3/8"	2 5/8"	1 7/8"	1 1/8"	9/16"	1/8"	0
GIRDER 3																					
TWENTIETH POINTS	0	.05	.1	.15	.2	.25	.3	.35	.4	.45	.5	.55	.6	.65	.7	.75	.8	.85	.9	.95	0
DEFLECTION DUE TO WEIGHT OF GIRDER ↓	0.0	0.019	0.037	0.055	0.070	0.083	0.095	0.104	0.110	0.114	0.116	0.114	0.110	0.104	0.095	0.083	0.070	0.055	0.037	0.019	0.0
* DEFLECTION DUE TO WEIGHT OF SLAB ↓	0.0	0.066	0.145	0.218	0.283	0.340	0.389	0.427	0.455	0.473	0.478	0.473	0.455	0.427	0.389	0.340	0.283	0.218	0.145	0.066	0.0
DEFLECTION DUE TO WEIGHT OF BARRIER RAIL ↓	0.0	0.008	0.016	0.023	0.030	0.036	0.041	0.044	0.047	0.049	0.049	0.049	0.047	0.044	0.041	0.036	0.030	0.023	0.016	0.008	0.0
TOTAL DEAD LOAD DEFLECTION ↓	0.0	0.093	0.198	0.296	0.383	0.459	0.525	0.575	0.612	0.636	0.643	0.636	0.612	0.575	0.525	0.459	0.383	0.296	0.198	0.093	0.0
VERTICAL CURVE ORDINATE (SAG) ↑	0.0	-0.016	-0.033	-0.049	-0.066	-0.082	-0.099	-0.115	-0.132	-0.148	-0.165	-0.181	-0.198	-0.214	-0.224	-0.221	-0.206	-0.178	-0.135	-0.075	0.0
REQUIRED CAMBER ↑	0	1 5/16"	2"	2 15/16"	3 13/16"	4 1/2"	5 1/8"	5 1/2"	5 3/4"	5 7/8"	5 3/4"	5 1/6"	4 15/16"	4 5/16"	3 5/8"	2 7/8"	2 1/8"	1 1/16"	3/4"	3/16"	0

* INCLUDES SLAB, BUILDUPS & STAY-IN-PLACE FORMS.
ALL VALUES ARE SHOWN IN FEET (DECIMAL FORM), EXCEPT "REQUIRED CAMBER", WHICH IS GIVEN IN INCHES (FRACTION FORM).

PROJECT NO. B-4263
RUTHERFORD COUNTY
STATION: 15+35.00 -L-



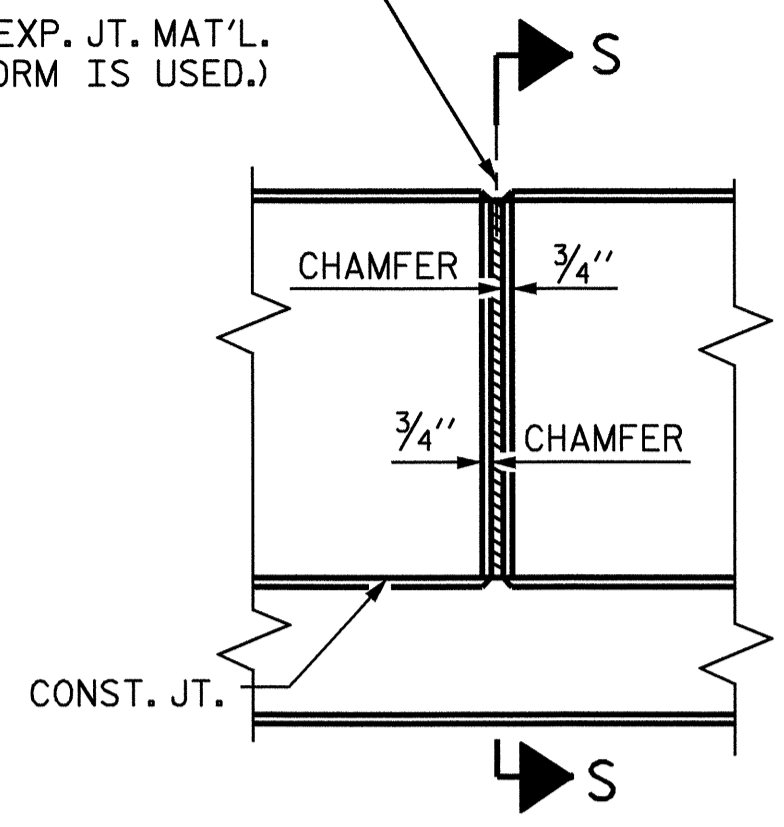
STATE OF NORTH CAROLINA
DEPARTMENT OF TRANSPORTATION
RALEIGH

**SUPERSTRUCTURE
DEAD LOAD
DEFLECTIONS**

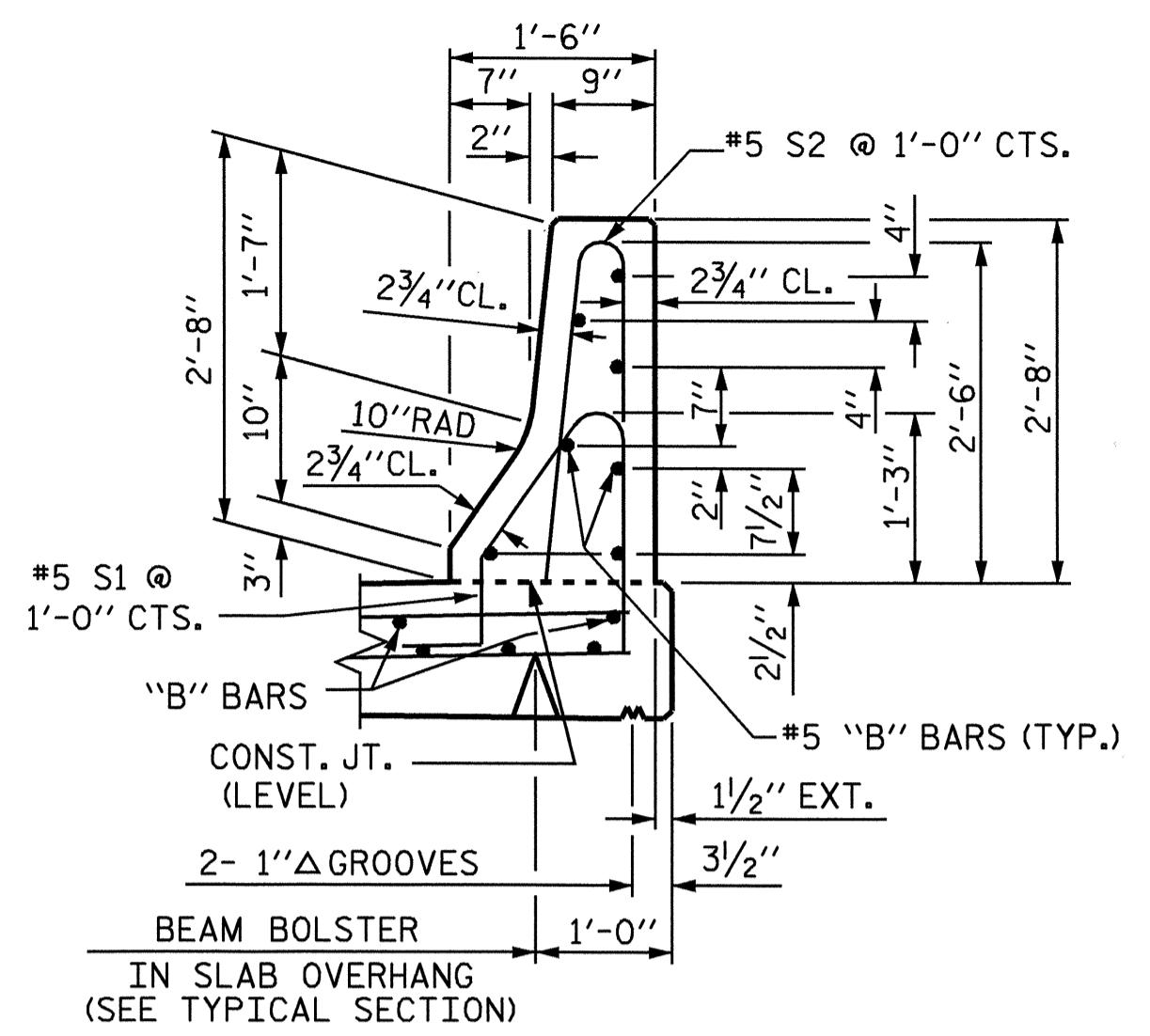
REVISIONS						SHEET NO.
NO.	BY:	DATE:	NO.	BY:	DATE:	S-11
1			3			TOTAL SHEETS
2			4			24

DRAWN BY : A. SORSENGINH DATE : 5/16/08
CHECKED BY : T. L. COGGINS DATE : 6/24/08

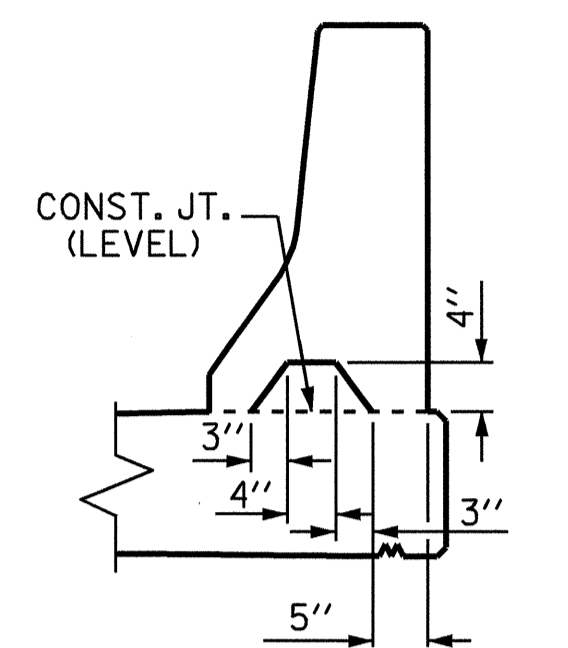
① 1/2" EXP. JT. MAT'L HELD IN PLACE WITH GALVANIZED NAILS.
(NOTE: OMIT EXP. JT. MAT'L. WHEN SLIP FORM IS USED.)



ELEVATION AT EXPANSION JOINTS
BARRIER RAIL DETAILS



SECTION THRU RAIL



SECTION S-S
AT DAM IN OPEN JOINT
(THIS IS TO BE USED ONLY WHEN SLIP FORM IS USED)

NOTES

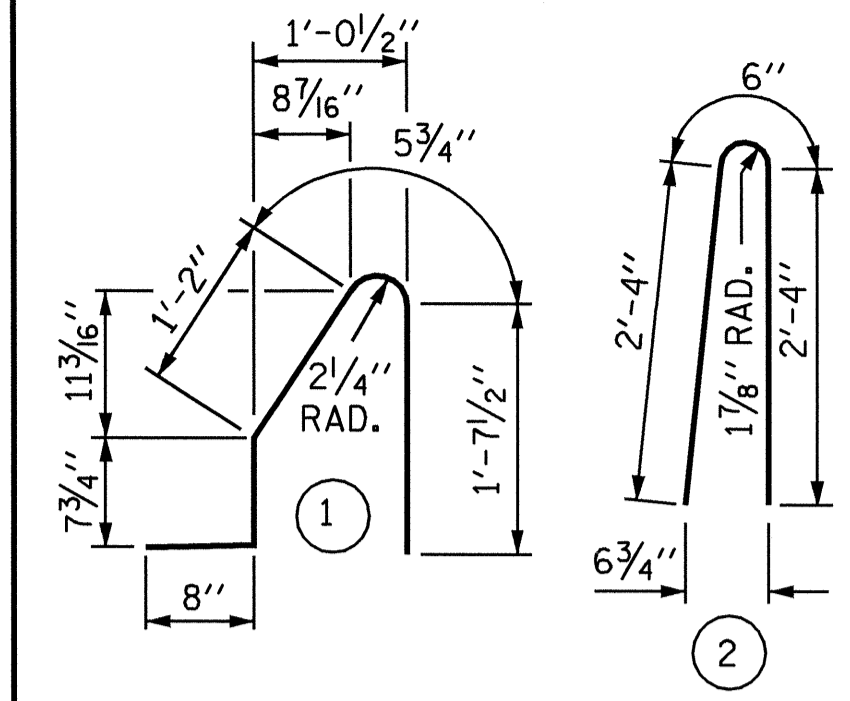
THE BARRIER RAIL IN THE SPAN SHALL NOT BE CAST UNTIL ALL SLAB CONCRETE IN THE SPAN HAS BEEN CAST AND HAS REACHED A MINIMUM COMPRESSIVE STRENGTH OF 3,000 PSI.

ALL REINFORCING STEEL IN BARRIER RAILS SHALL BE EPOXY COATED.

VERTICAL GROOVED CONTRACTION JOINTS, 1/2" IN DEPTH, SHALL BE TOOLED IN ALL EXPOSED FACES OF THE BARRIER RAIL AND IN ACCORDANCE WITH ARTICLE 825-10(B) OF THE STANDARD SPECIFICATIONS. THE CONTRACTION JOINT SHALL BE LOCATED AT EACH THIRD POINT BETWEEN BARRIER RAIL EXPANSION JOINTS. ONLY ONE CONTRACTION JOINT IS REQUIRED AT MIDPOINT OF BARRIER RAIL SEGMENTS LESS THAN 20 FEET IN LENGTH AND NO CONTRACTION JOINTS ARE REQUIRED FOR THOSE SEGMENTS LESS THAN 10 FEET IN LENGTH.

THE #5S1 AND #5S2 BARS MAY BE SHIFTED SLIGHTLY IN ORDER TO MAINTAIN A 2" MINIMUM CLEARANCE TO THE 1/2" EXPANSION JOINT MATERIAL IN BARRIER RAIL.

BAR TYPES



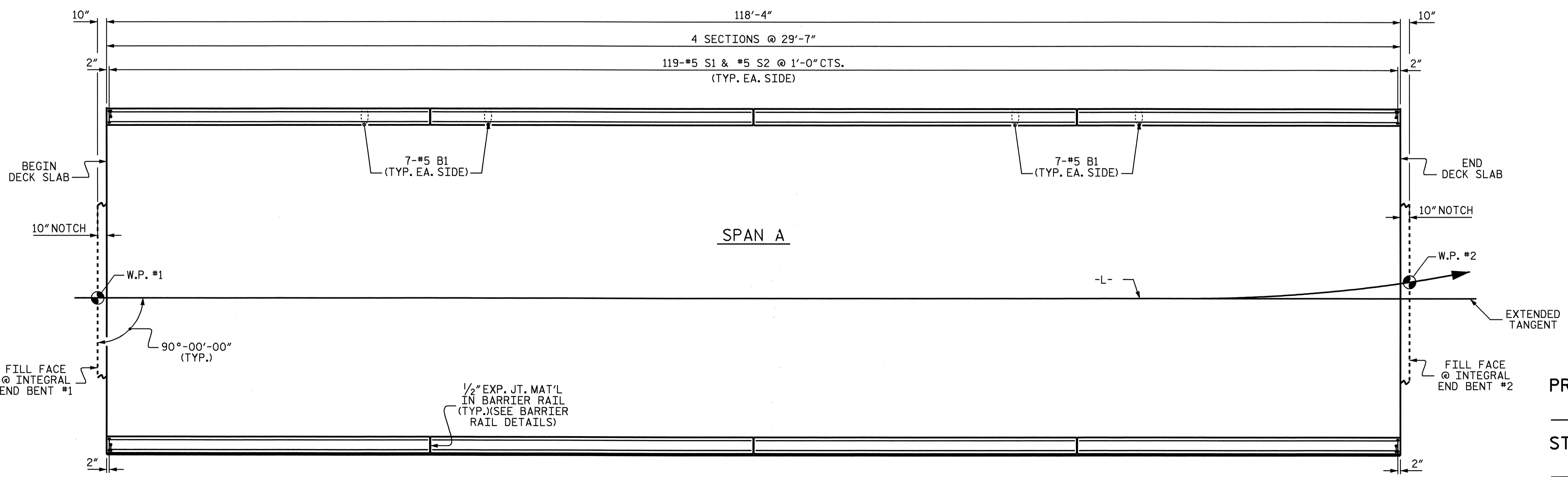
ALL BAR DIMENSIONS ARE OUT TO OUT

BILL OF MATERIAL

FOR CONCRETE BARRIER RAIL ONLY

BAR	NO.	SIZE	TYPE	LENGTH	WEIGHT
* S1	238	#5	1	4'-7"	1138
* S2	238	#5	2	5'-2"	1283
* B1	56	#5	STR	29'-2"	1704

* EPOXY COATED REINFORCING STEEL 4125 LBS.
CLASS AA CONCRETE 23.7 CU. YDS.
CONCRETE BARRIER RAIL 236.67 LIN. FT.

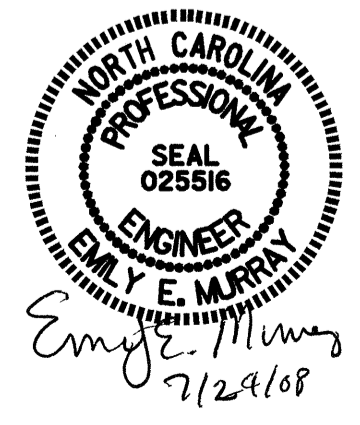


PLAN

PROJECT NO. B-4263
RUTHERFORD COUNTY
STATION: 15+34.93 -L-

STATE OF NORTH CAROLINA
DEPARTMENT OF TRANSPORTATION
RALEIGH

CONCRETE BARRIER RAIL



REVISIONS						SHEET NO.
NO.	BY:	DATE:	NO.	BY:	DATE:	S-12
1			3			TOTAL SHEETS
2			4			24

ASSEMBLED BY : A. SORSENGINH	DATE : 5/19/08
CHECKED BY : T.L. COGGINS	DATE : 6/18/08
DRAWN BY : ARB 5/87	REV. 10/17/00 RWW/LES
CHECKED BY : SJD 9/87	REV. 5/7/03R RWW/JTE
	REV. 5/1/06 TLA/GM

NOTES

THE GUARDRAIL ANCHOR ASSEMBLY SHALL CONSIST OF A 1/4" HOLD DOWN PLATE AND 4 - 7/8" Ø BOLTS WITH NUTS AND WASHERS, RUBRAIL, AND ADHESIVELY ANCHORED BOLTS.

THE HOLD-DOWN PLATE SHALL CONFORM TO AASHTO M270 GRADE 36. AFTER FABRICATION, THE HOLD-DOWN PLATE SHALL BE HOT-DIP GALVANIZED IN ACCORDANCE WITH AASHTO M11.

BOLTS SHALL CONFORM TO THE REQUIREMENTS OF ASTM A307 AND NUTS SHALL CONFORM TO THE REQUIREMENTS OF AASHTO M291. BOLTS, NUTS AND WASHERS SHALL BE GALVANIZED. (AT THE CONTRACTOR'S OPTION, STAINLESS STEEL BOLTS, NUTS AND WASHERS MAY BE USED AS AN ALTERNATE FOR THE 7/8" Ø GALVANIZED BOLTS, NUTS AND WASHERS. THEY SHALL CONFORM TO OR EXCEED THE MECHANICAL REQUIREMENTS OF ASTM A307. THE USE OF THIS ALTERNATE SHALL BE APPROVED BY THE ENGINEER.)

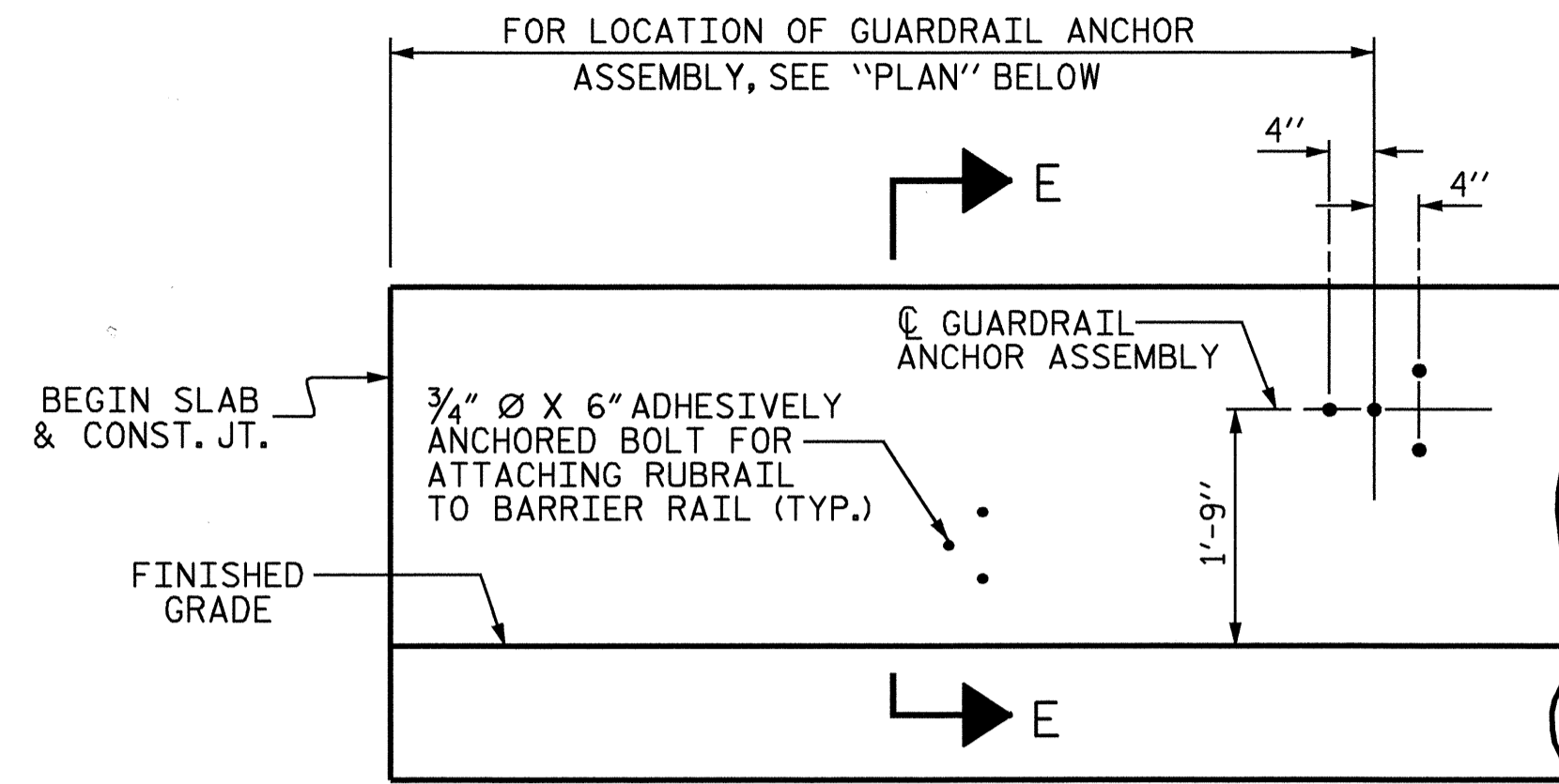
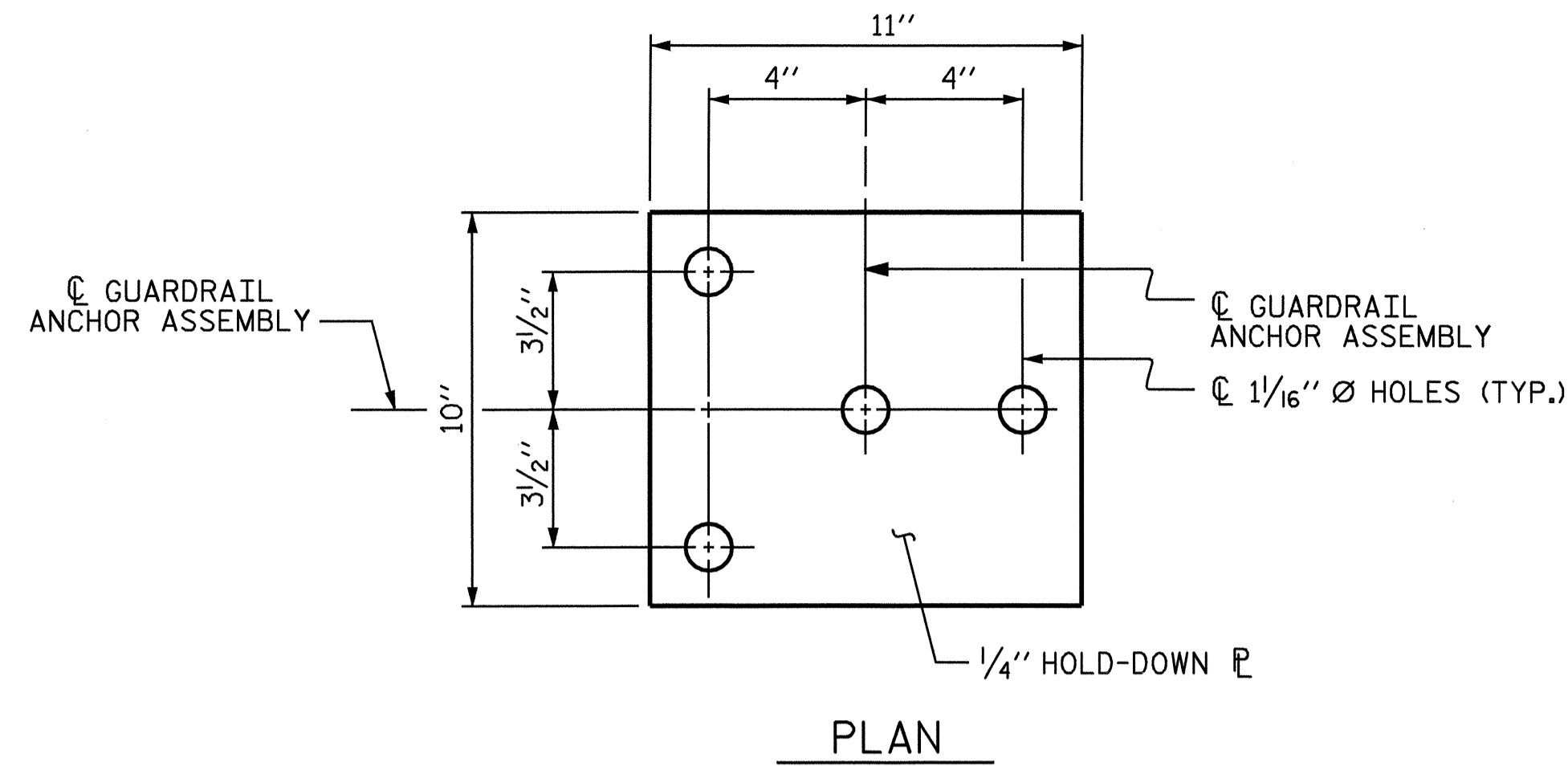
THE GUARDRAIL ANCHOR ASSEMBLY IS REQUIRED AT ALL POINTS WHERE APPROACH GUARDRAIL IS TO BE ATTACHED TO THE END OF BARRIER RAIL. FOR POINTS OF ATTACHMENT, SEE SKETCH.

AFTER INSTALLATION, THE EXPOSED THREAD OF THE BOLT SHALL BE BURRED WITH A SHARP POINTED TOOL.

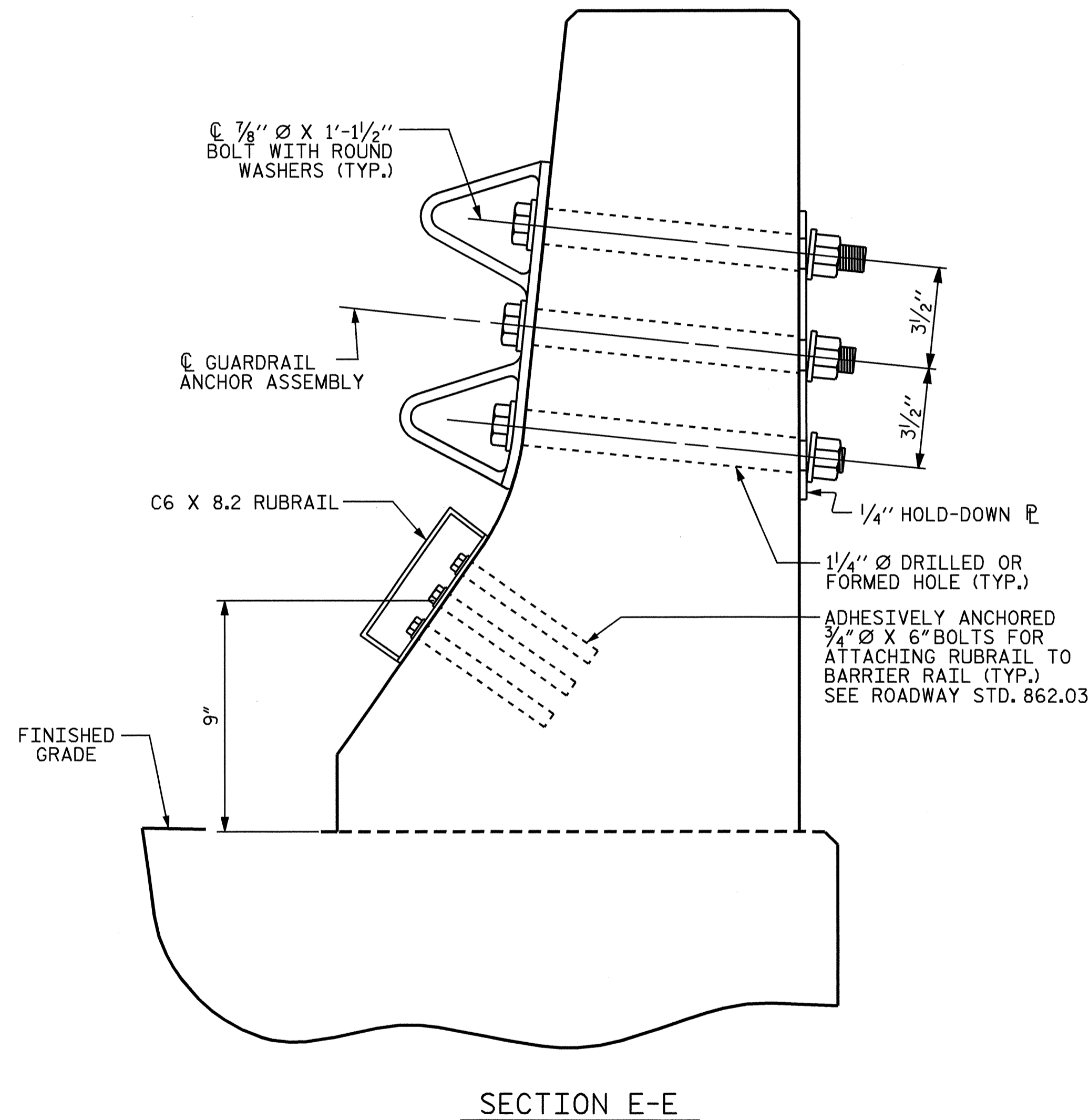
THE COST OF THE GUARDRAIL ANCHOR ASSEMBLY SHALL BE INCLUDED IN THE UNIT CONTRACT PRICE BID FOR CONCRETE BARRIER RAIL.

THE 1/4" Ø HOLES SHALL BE FORMED OR DRILLED WITH A CORE BIT. IMPACT TOOLS WILL NOT BE PERMITTED. ANY CONCRETE DAMAGED BY THIS WORK SHALL BE REPAIRED TO THE SATISFACTION OF THE ENGINEER.

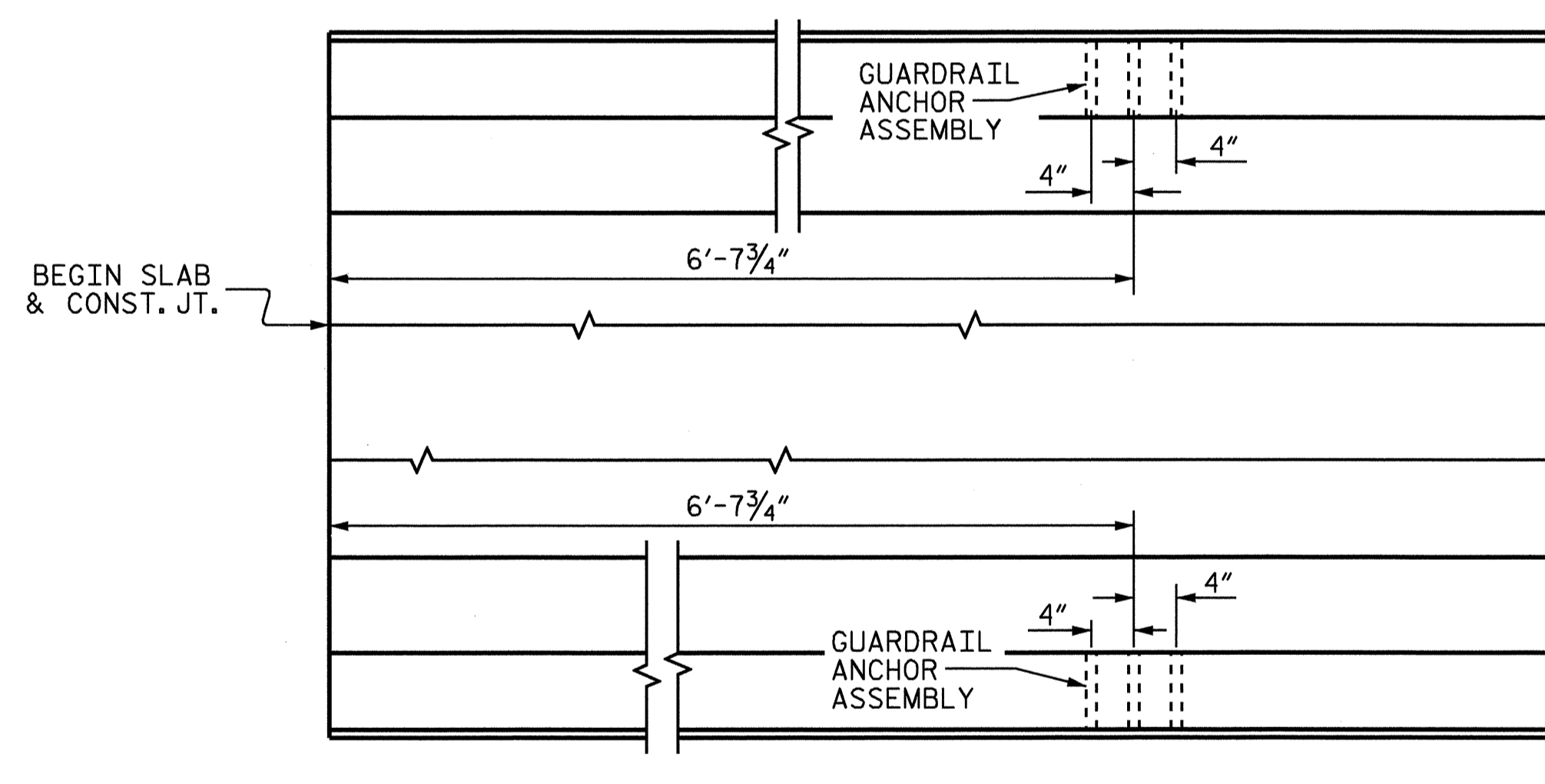
THE C6 X 8.2 RUBRAIL IS TO BE ADHESIVELY ANCHORED TO THE RAIL USING THREE 3/4" Ø X 6" BOLTS WITH WASHERS. LEVEL ONE FIELD TESTING IS REQUIRED, AND THE YIELD LOAD OF THE 3/4" Ø BOLT IS 12 KIPS. FOR ADHESIVELY ANCHORED ANCHOR BOLTS OR DOWELS, SEE SPECIAL PROVISIONS. SEE ROADWAY STANDARD 862.03 FOR DETAILS AND LOCATION OF THE RUBRAIL.



ELEVATION
FOR LOCATION OF RUBRAIL, SEE ROADWAY STD. 862.03

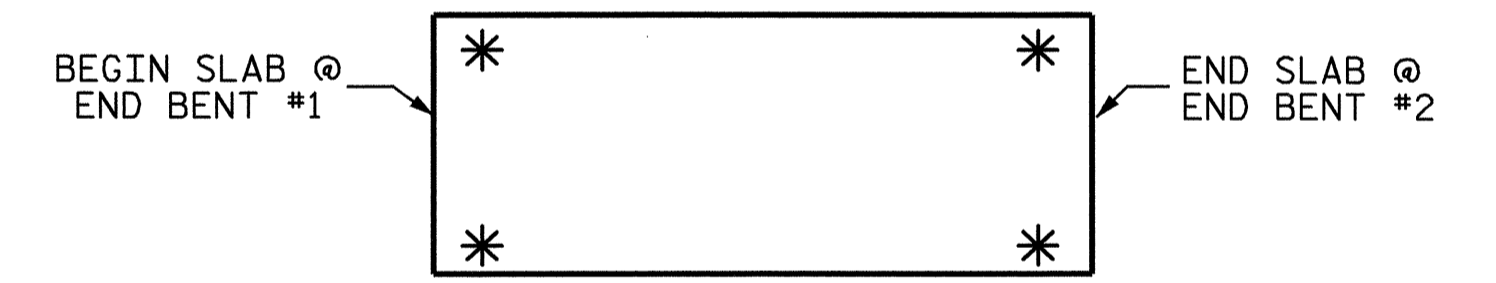


SECTION E-E
GUARDRAIL ANCHOR ASSEMBLY DETAILS



PLAN
LOCATION OF ANCHORS FOR GUARDRAIL

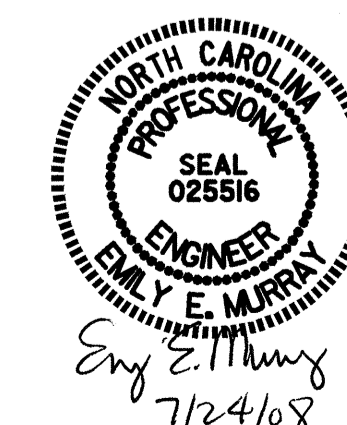
END BENT #1 SHOWN, END BENT #2 SIMILAR.



SKETCH SHOWING POINTS OF ATTACHMENTS

* DENOTES GUARDRAIL ANCHOR ASSEMBLY

PROJECT NO. B-4263
RUTHERFORD COUNTY
 STATION: 15+34.93 -L-



STATE OF NORTH CAROLINA
 DEPARTMENT OF TRANSPORTATION
 RALEIGH
 STANDARD
 GUARDRAIL ANCHORAGE
 FOR BARRIER RAIL

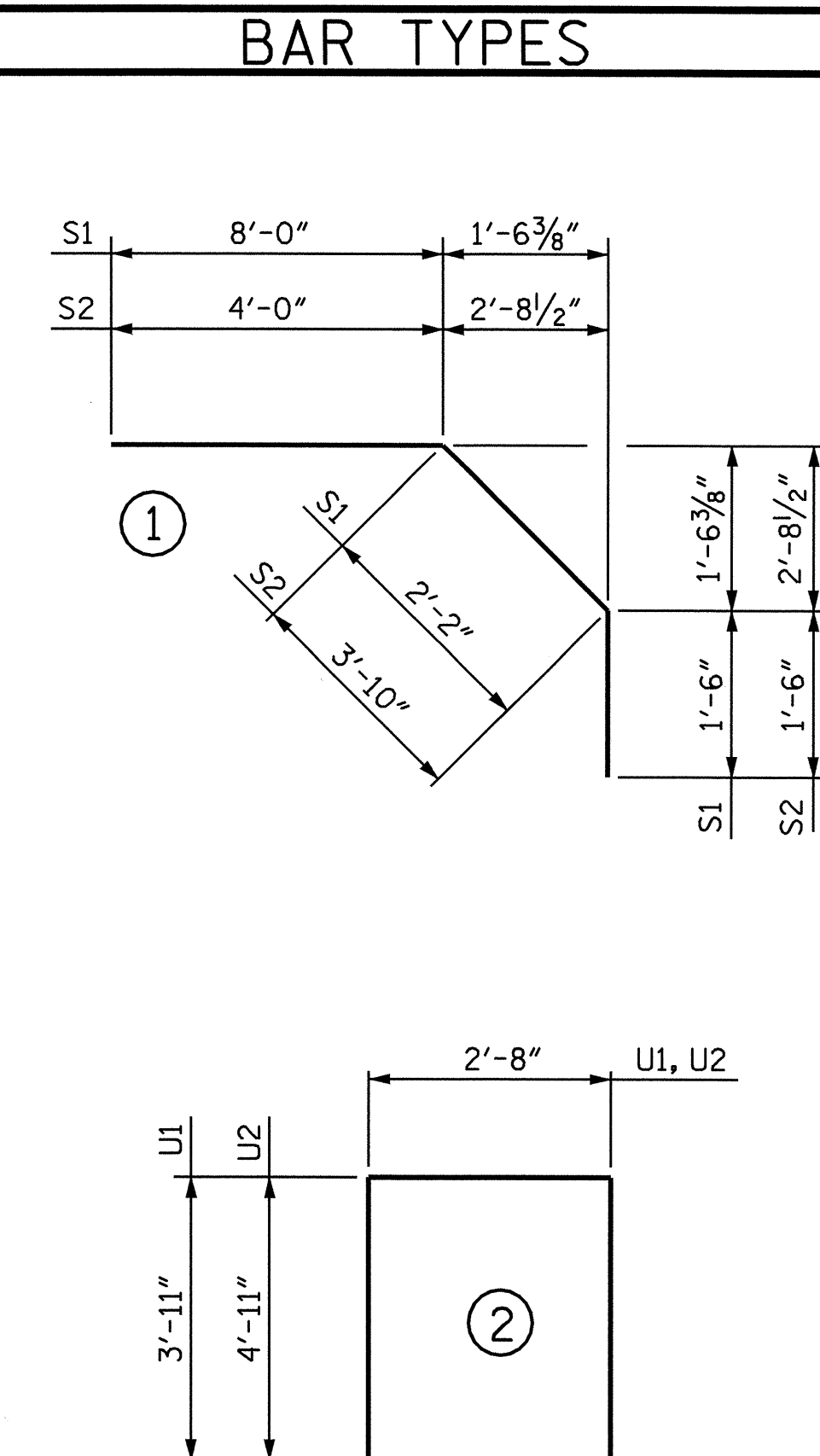
ASSEMBLED BY :	A. SORSENGINH	DATE :	4/20/08
CHECKED BY :	T.L. COGGINS	DATE :	6/11/08
DRAWN BY :	TLA 5/06	ADDED :	5/11/06R KMM/GM
CHECKED BY :	GM 5/06		

REVISIONS						SHEET NO.
NO.	BY:	DATE:	NO.	BY:	DATE:	S-13
1			3			TOTAL SHEETS
2			4			24

GROOVING BRIDGE FLOORS		
APPROACH SLABS	673	SQ.FT.
BRIDGE DECK	3,077	SQ.FT.
TOTAL	3,750	SQ.FT.

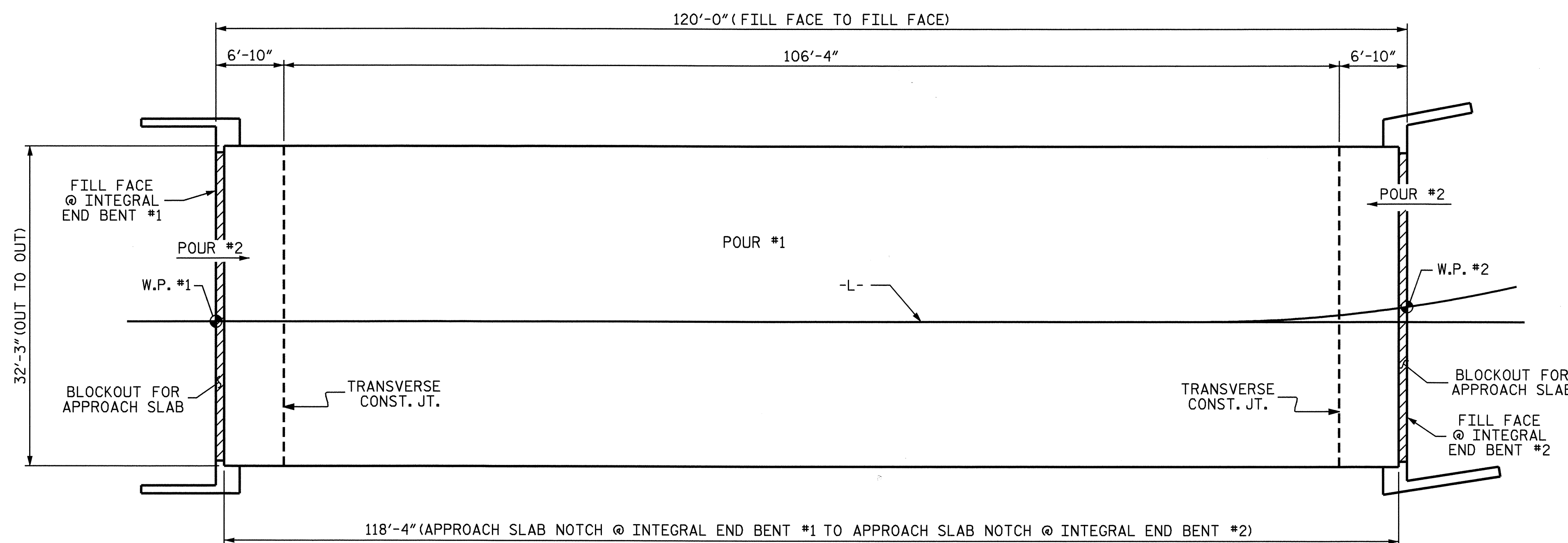
SUPERSTRUCTURE REINFORCING STEEL LENGTHS ARE BASED ON THE FOLLOWING MINIMUM SPLICE LENGTHS					
BAR SIZE	SUPERSTRUCTURE EXCEPT APPROACH SLABS, PARAPET, AND BARRIER RAIL		APPROACH SLABS		PARAPET AND BARRIER RAIL
	EPOXY COATED	UNCOATED	EPOXY COATED	UNCOATED	
#4	2'-0"	1'-9"	2'-0"	1'-9"	2'-9"
#5	2'-6"	2'-2"	2'-6"	2'-2"	3'-5"
#6	3'-0"	2'-7"	3'-10"	2'-7"	4'-4"
#7	5'-3"	3'-6"			
#8	6'-10"	4'-7"			

BILL OF MATERIAL					
SPAN A					
BAR	NO.	SIZE	TYPE	LENGTH	WEIGHT
*A1	203	#5	STR	31'-11"	6758
A2	203	#5	STR	31'-11"	6758
*B1	44	#5	STR	24'-0"	1101
*B2	84	#6	STR	24'-0"	3028
B3	114	#5	STR	40'-10"	4855
*B4	44	#4	STR	38'-0"	1117
K1	40	#4	STR	20'-0"	534
K2	16	#4	STR	2'-4"	25
*S1	50	#4	1	11'-8"	390
*S2	50	#4	1	9'-4"	312
U1	54	#4	2	10'-6"	379
U2	12	#4	2	12'-6"	100
V2	8	#4	STR	3'-9"	20
REINFORCING STEEL					= 12,671 LBS
*EPOXY COATED REINF. STEEL					= 12,706 LBS



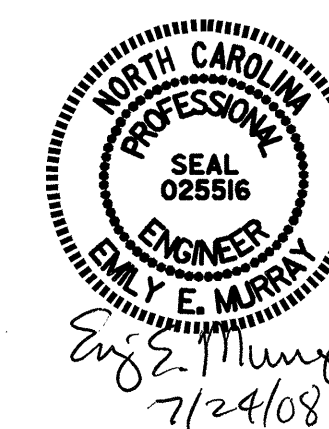
	CLASS AA CONCRETE (CU.YDS.)	REINFORCING STEEL (LBS.)	EPOXY COATED REINFORCING STEEL (LBS.)
SPAN A		12,671	12,706
POUR #1	104.3		
POUR #2	58.5		
*TOTALS	162.8	12,671	12,706

** QUANTITIES DO NOT INCLUDE BARRIER RAIL. POUR #2 INCLUDES UPPER POUR OF WINGS AND INTEGRAL END BENT.



LAYOUT FOR COMPUTING AREA OF REINFORCED CONCRETE DECK SLAB (SQ. FT. = 3,870)

PROJECT NO. B-4263
RUTHERFORD COUNTY
STATION: 15+34.93 -L-



STATE OF NORTH CAROLINA DEPARTMENT OF TRANSPORTATION RALEIGH					
STANDARD					
SUPERSTRUCTURE BILL OF MATERIAL					
REVISIONS					
NO.	BY:	DATE:	NO.	BY:	DATE:
1			3		
2			4		

ASSEMBLED BY : A. SORSENGINH	DATE : 5/19/08
CHECKED BY : T.L. COGGINS	DATE : 6/19/08
DRAWN BY : JMB 5/87	REV. 6/1/94 EEM/GRP
CHECKED BY : SJD 9/87	REV. 8/16/99 RWW/LES
	REV. 5/1/06 TLA/GM

NOTES

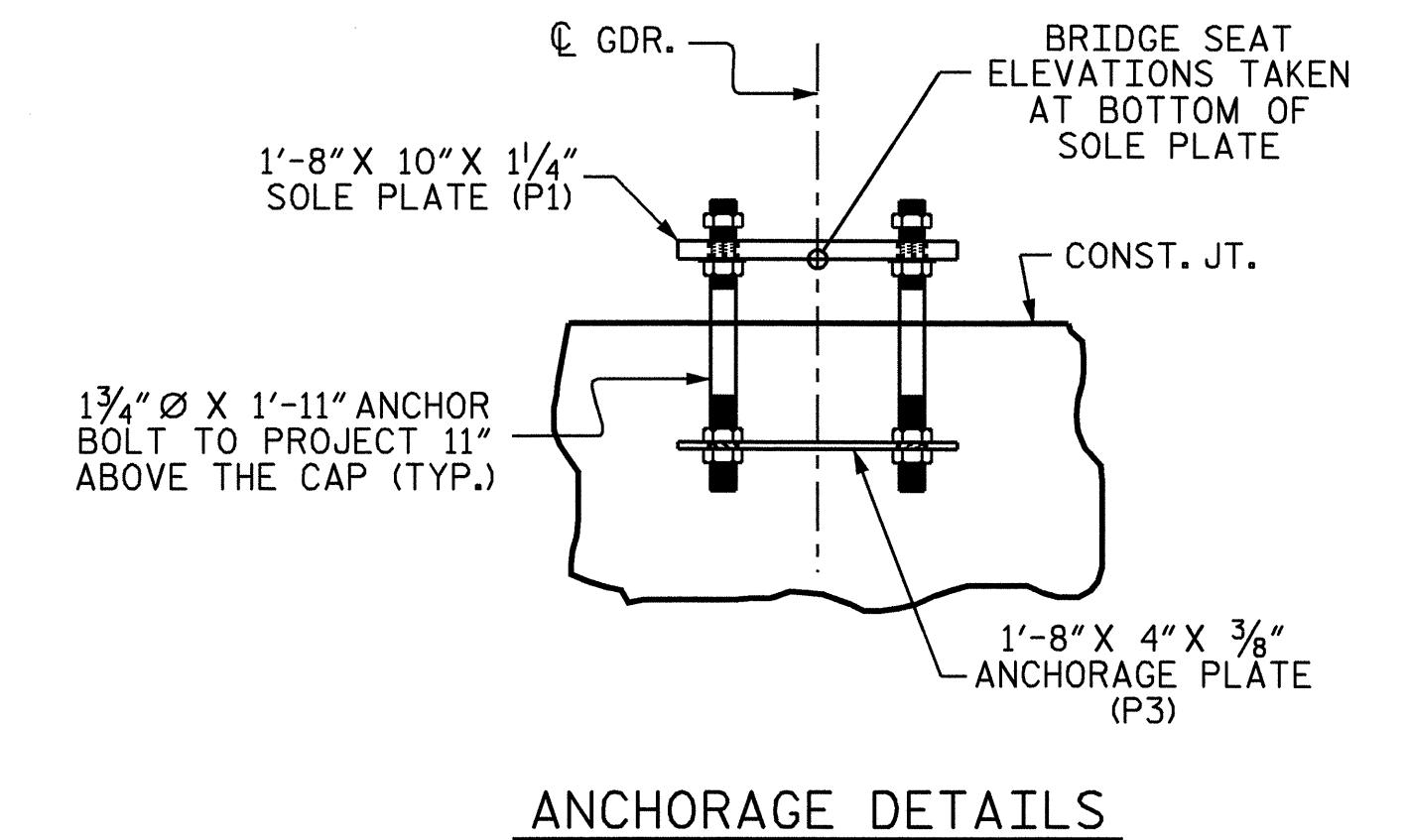
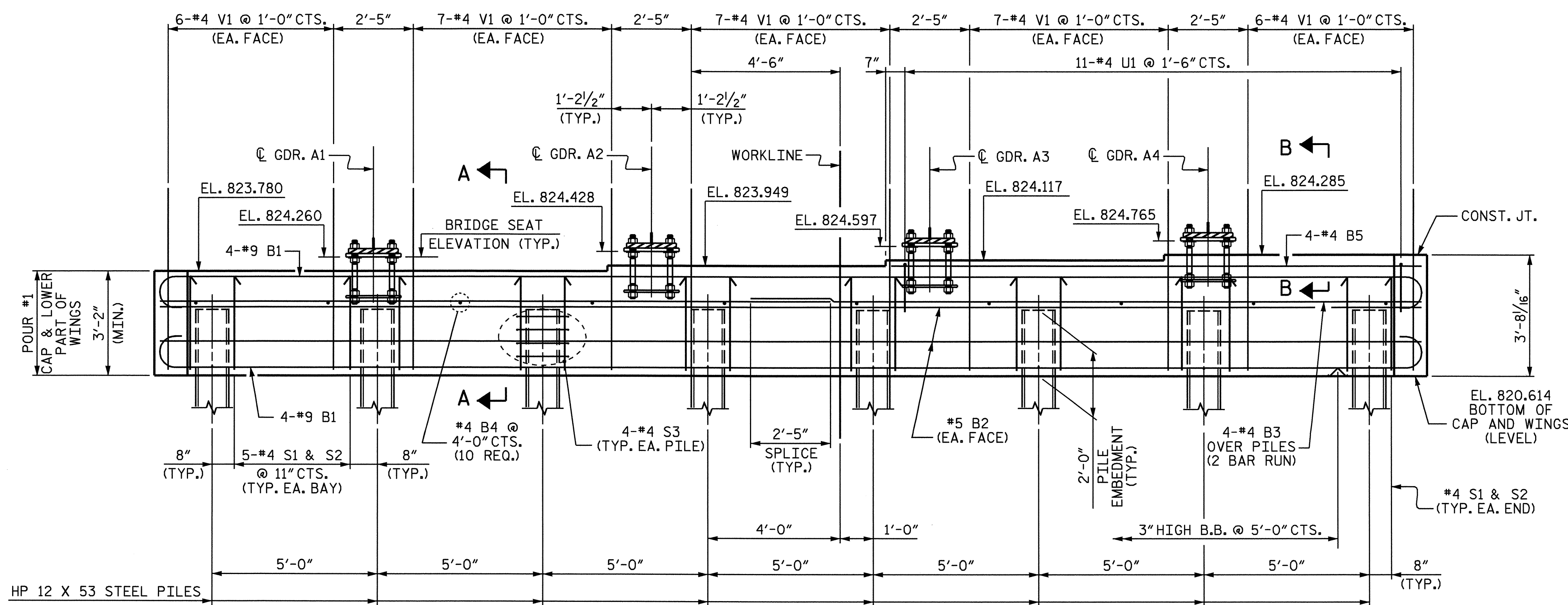
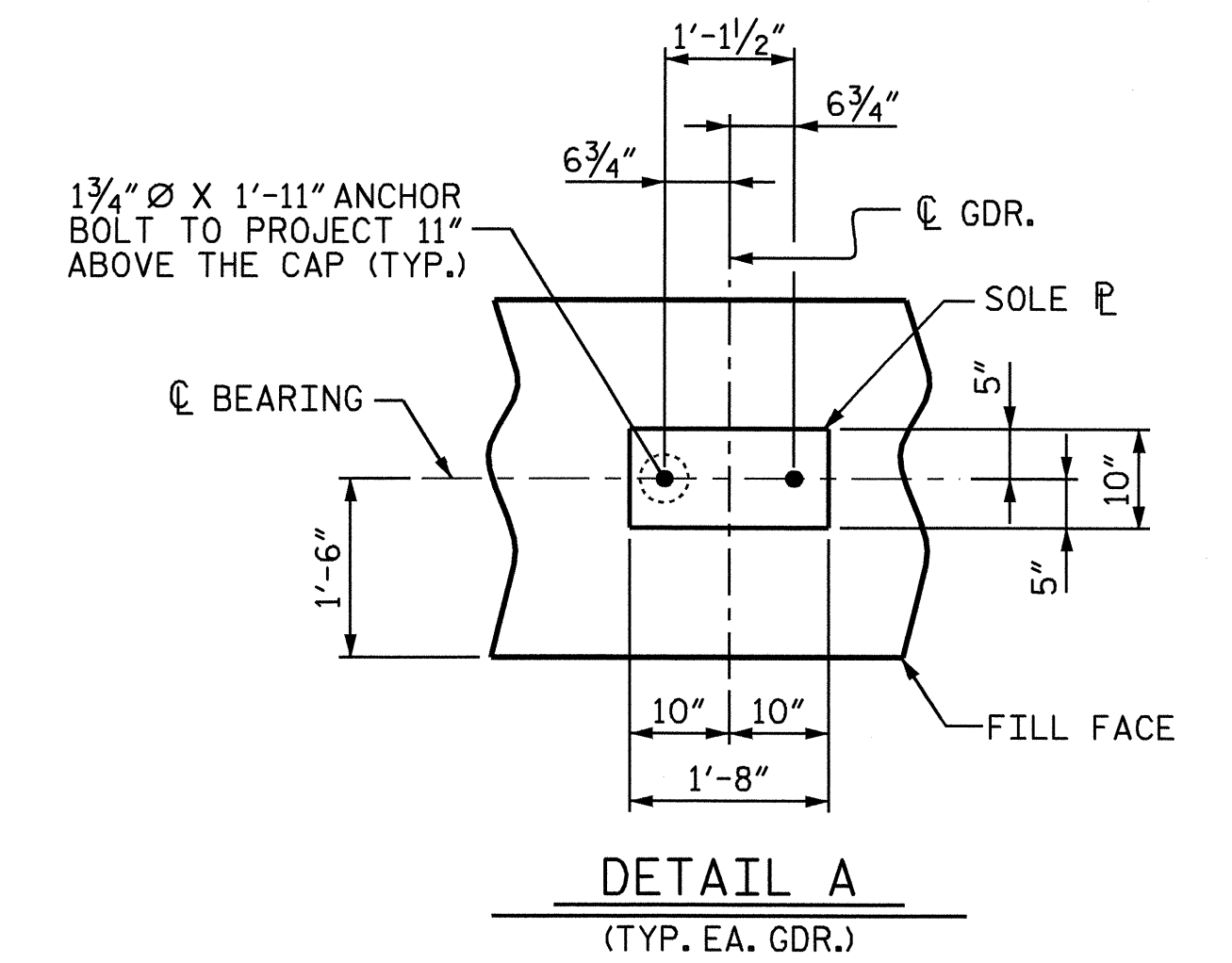
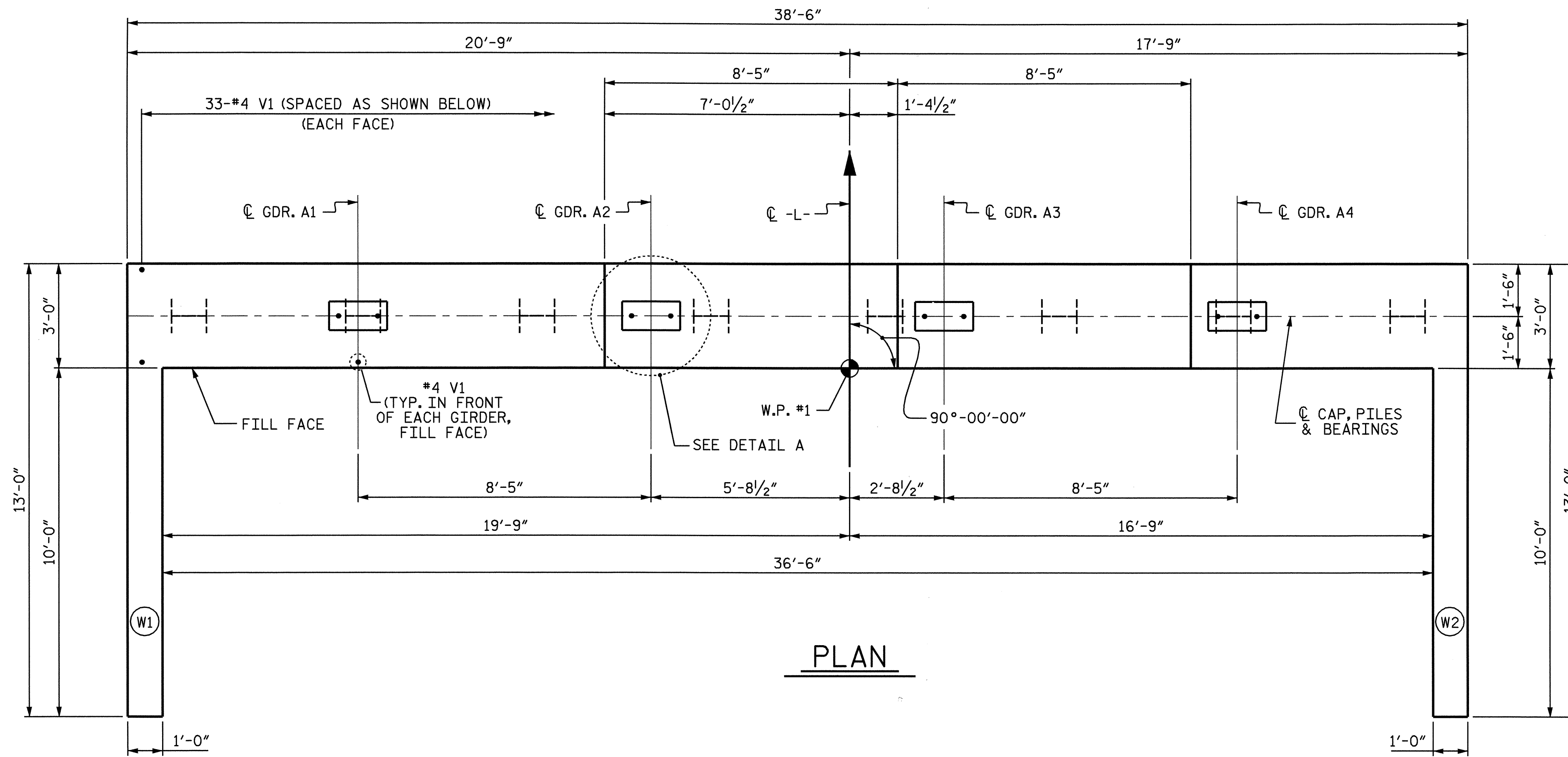
THE CONTRACTOR'S ATTENTION IS CALLED TO THE FACT THAT THE UPPER PART OF THE END BENT WINGS ARE POURED WITH POUR #2 OF THE SUPERSTRUCTURE.

SEE SUPERSTRUCTURE SHEETS FOR UPPER PART OF INTEGRAL END BENT DETAILS.

THE CONTRACTOR SHALL PROVIDE FOR INSTALLATION OF THE 4" DIAMETER DRAIN PIPE THROUGH THE WING WALL AS REQUIRED FOR REINFORCED BRIDGE APPROACH FILLS, SEE THE ROADWAY PLANS. REINFORCING STEEL IN THE WING WALL MAY BE SHIFTED AS NECESSARY TO CLEAR THE DRAIN PIPE.

STIRRUPS IN CAP MAY BE SHIFTED AS NECESSARY TO CLEAR ANCHOR BOLTS.

THE TOP SURFACE OF POUR #1 OF THE END BENT CAP AND WINGS, EXCLUDING THE OUTSIDE 4" AND THE BEARING AREA, SHALL BE RAKED TO A DEPTH OF 1/4".



PROJECT NO. B-4263
RUTHERFORD COUNTY
 STATION: 15+34.93 -L-

SHEET 1 OF 3

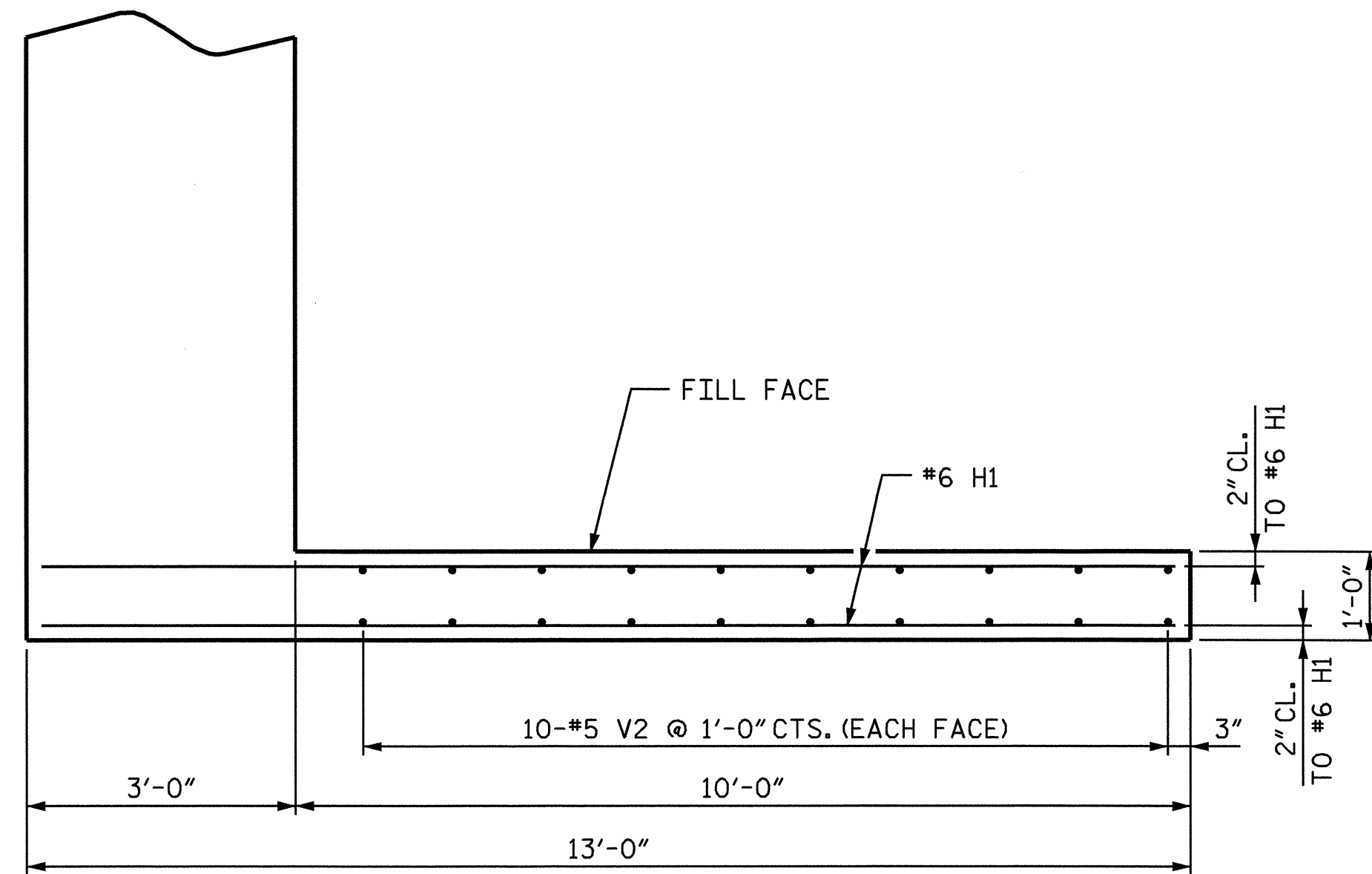
STATE OF NORTH CAROLINA
 DEPARTMENT OF TRANSPORTATION
 RALEIGH

**SUBSTRUCTURE
 INTEGRAL
 END BENT #1**

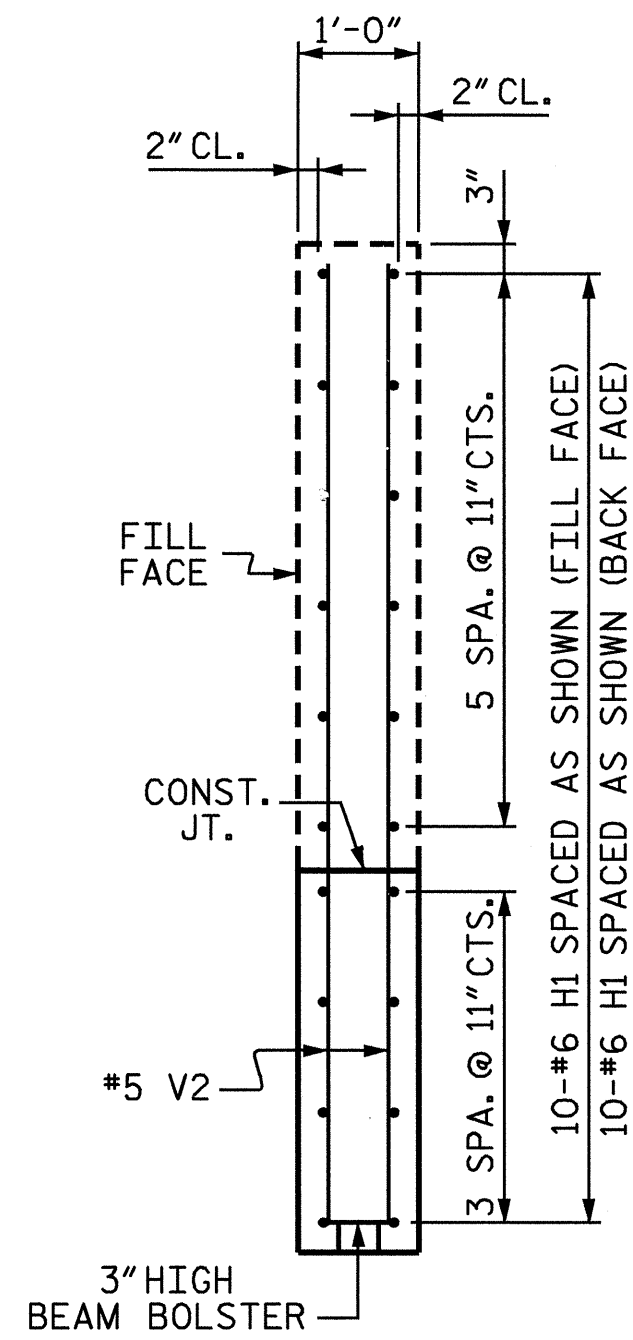


REVISIONS						SHEET NO. S-15
NO.	BY:	DATE:	NO.	BY:	DATE:	
1			3			TOTAL SHEETS 24
2			4			

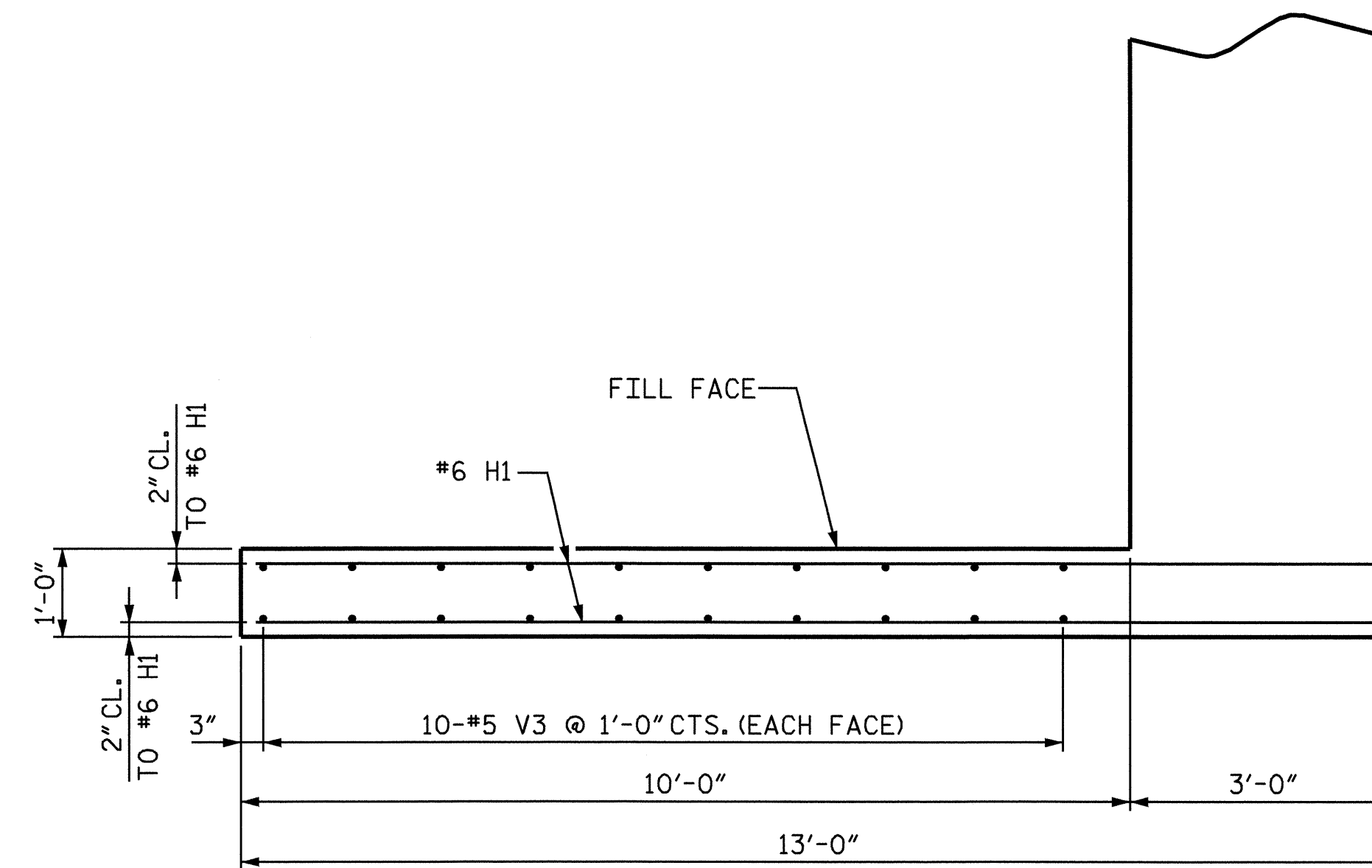
DRAWN BY : A. SORSENGINH DATE : 5/9/08
 CHECKED BY : T.L. AVERETTE DATE : 6/4/08



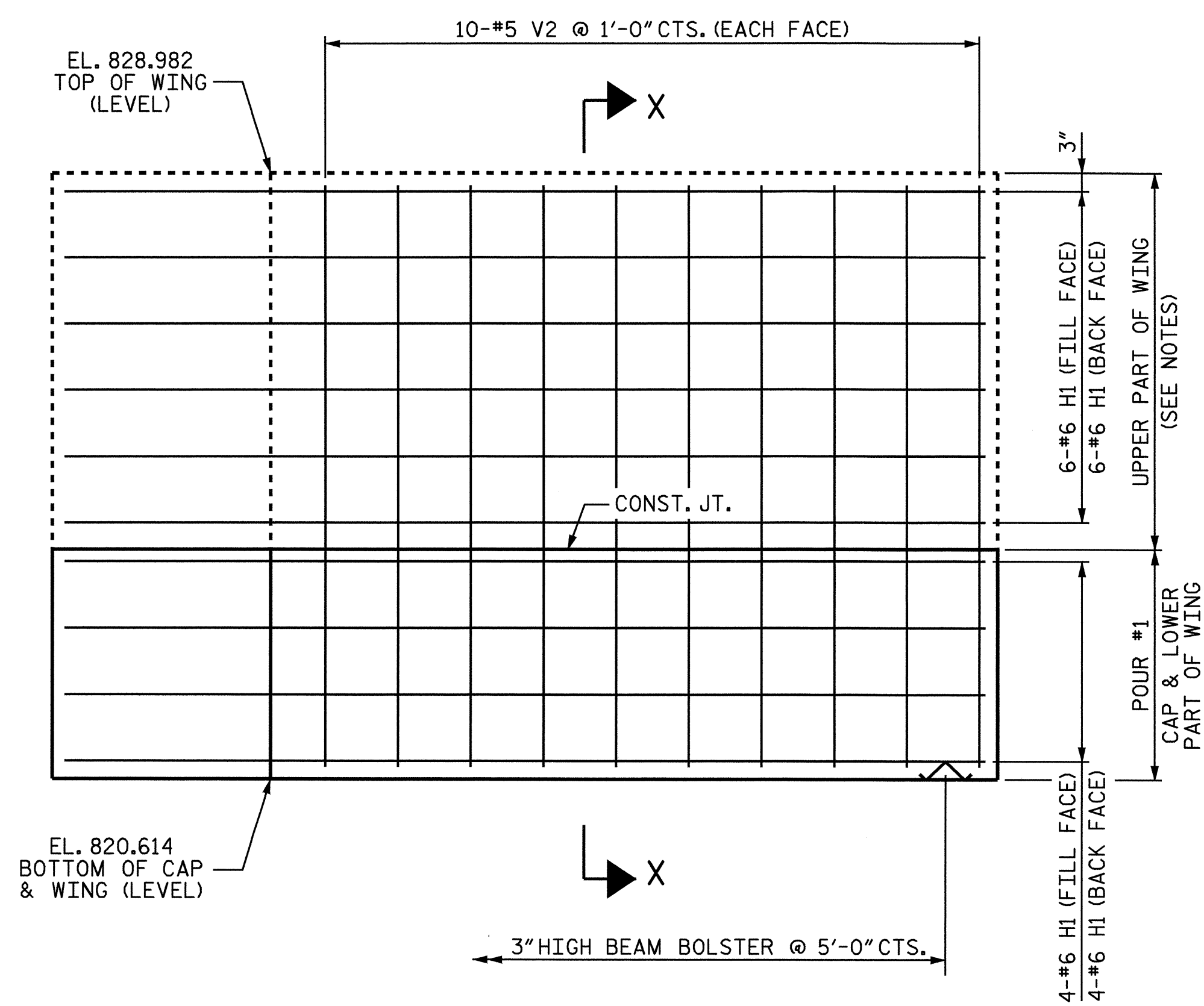
PLAN OF LEFT WING W1



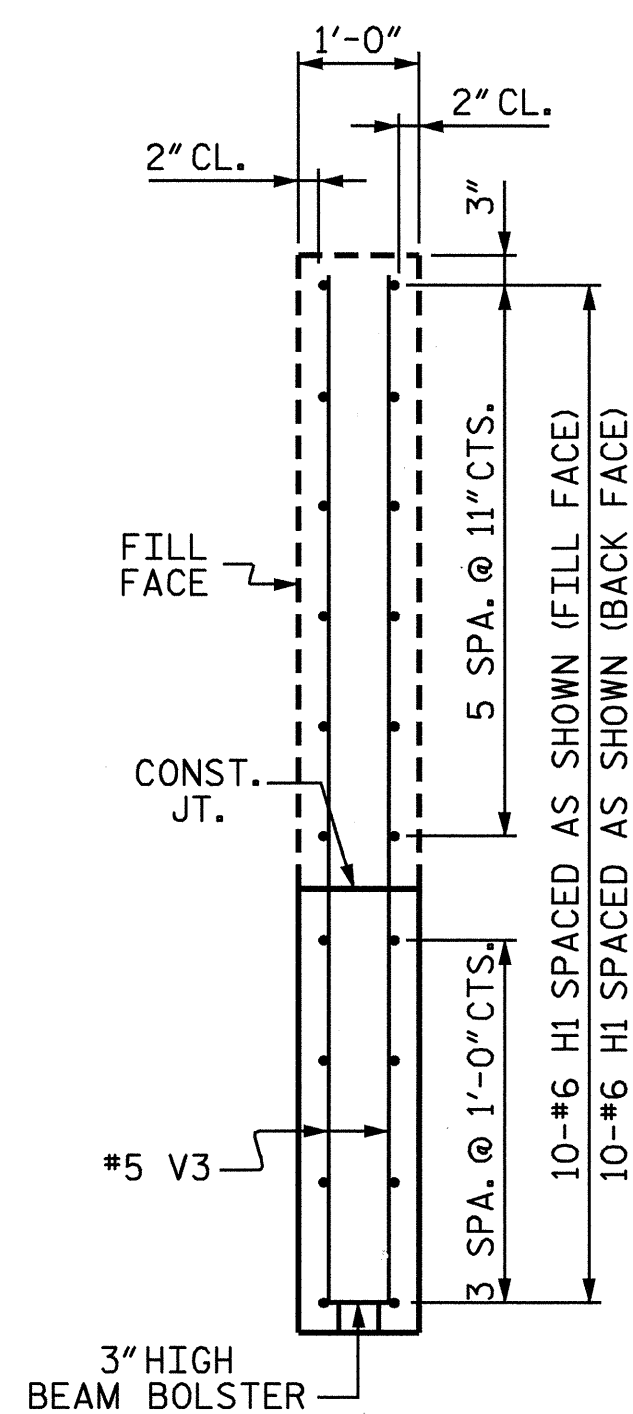
SECTION X-X



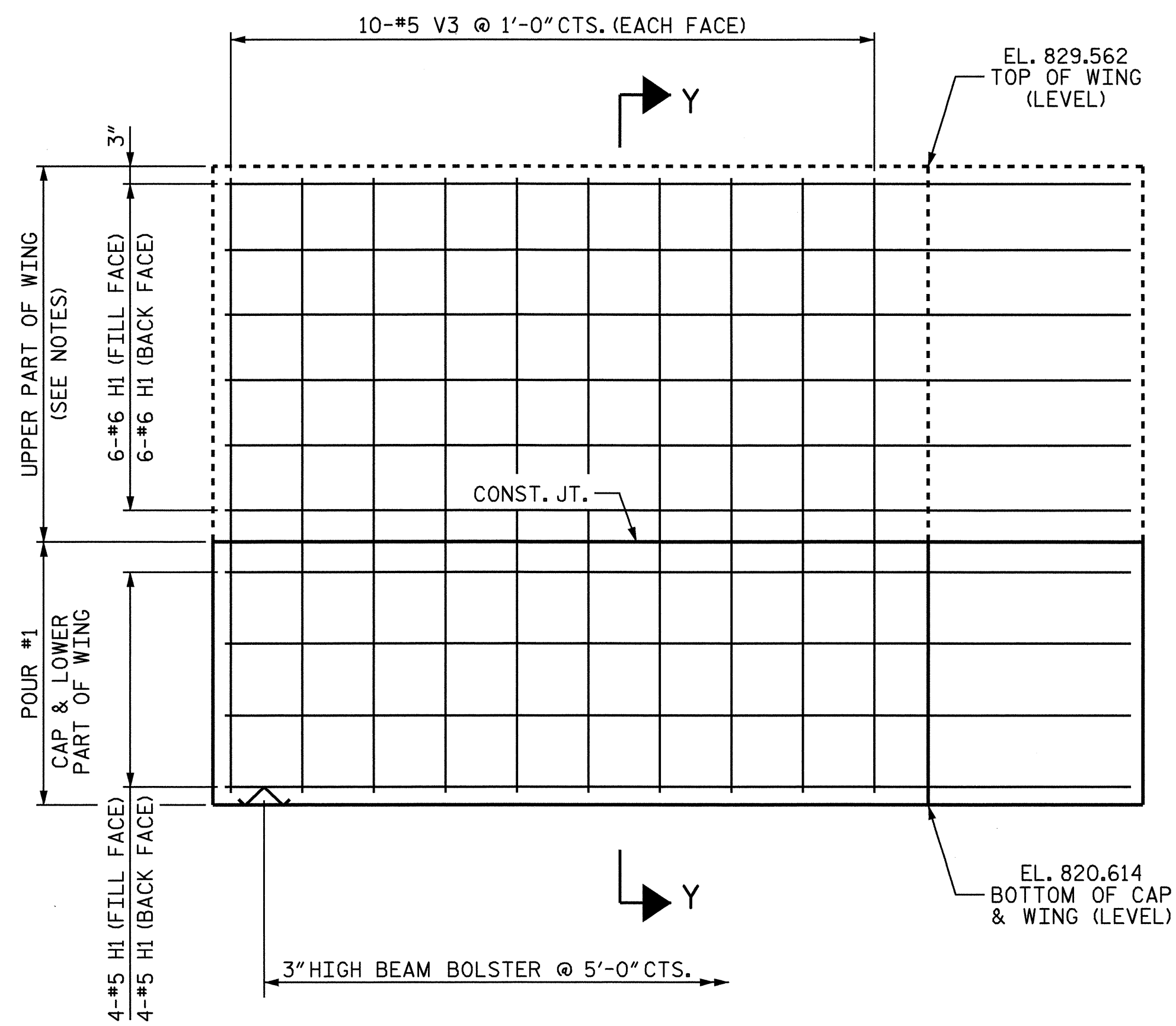
PLAN OF RIGHT WING W2



ELEVATION OF LEFT WING W1



SECTION Y-Y



ELEVATION OF RIGHT WING W2

PROJECT NO. B-4263
RUTHERFORD COUNTY
 STATION: 15+34.93 -L-

SHEET 2 OF 3

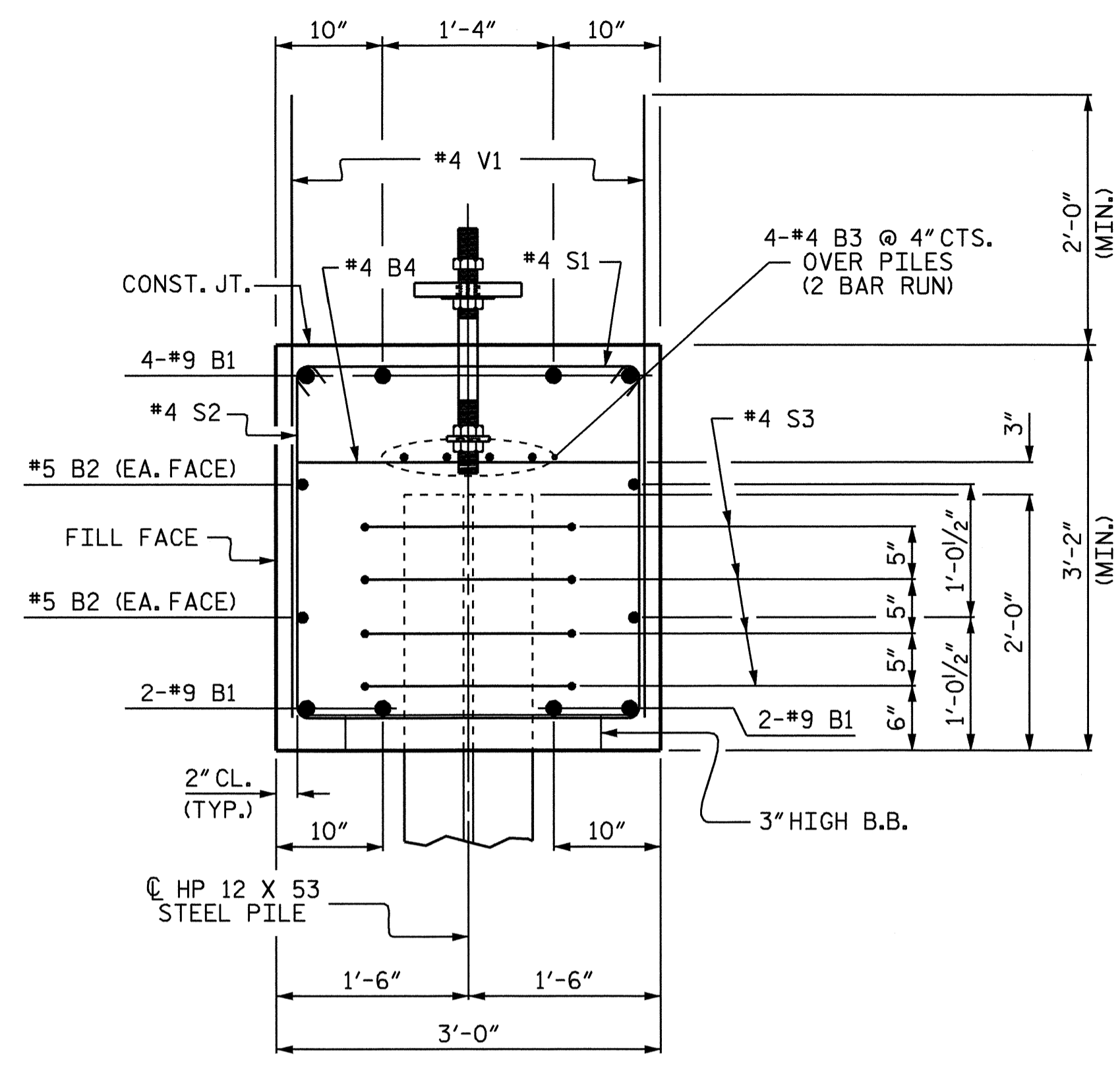
STATE OF NORTH CAROLINA
 DEPARTMENT OF TRANSPORTATION
 RALEIGH

SUBSTRUCTURE
 INTEGRAL
 END BENT #1

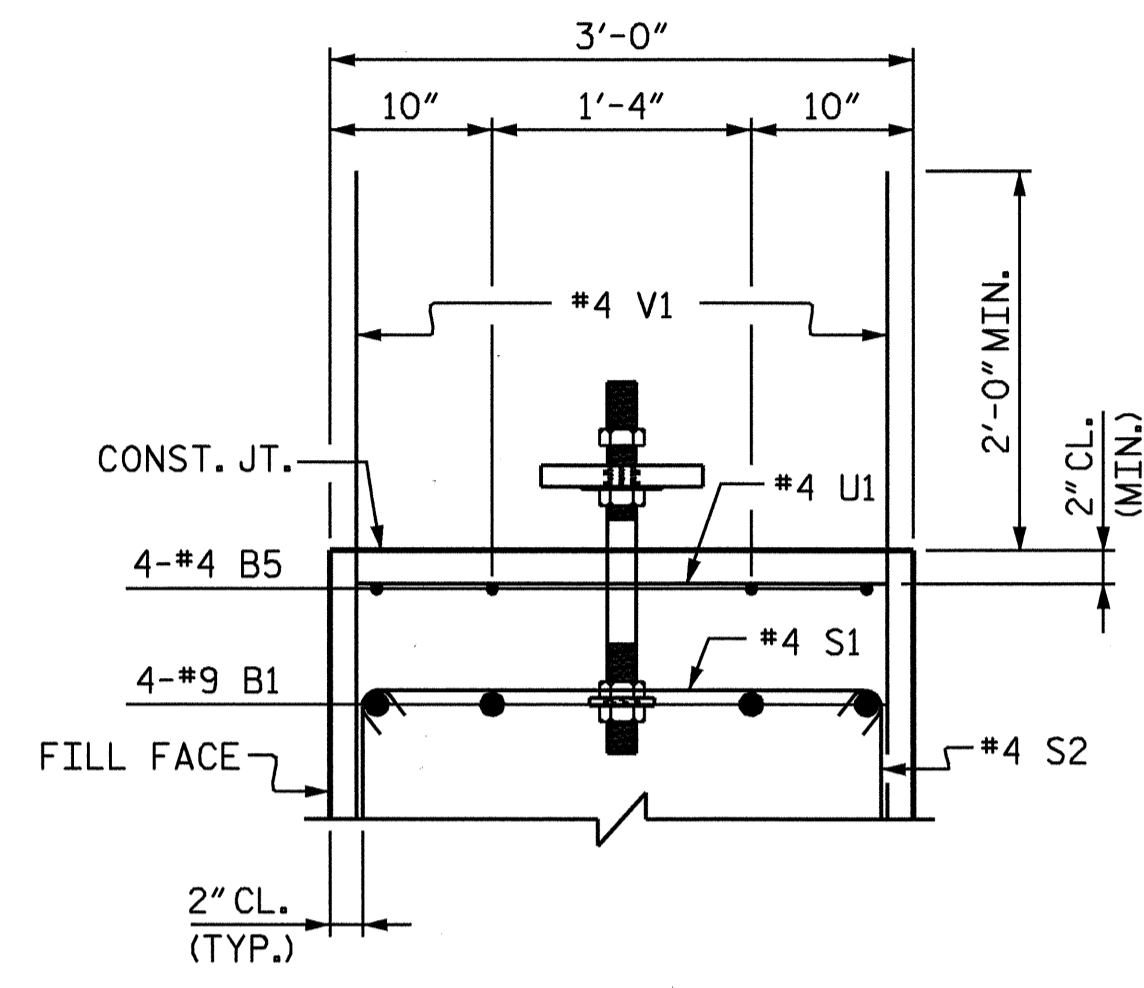


DRAWN BY : A. SORSENGINH DATE : 5/9/08
 CHECKED BY : T.L. AVERETTE DATE : 6/4/08

REVISIONS						SHEET NO.
NO.	BY:	DATE:	NO.	BY:	DATE:	S-16
1			3			TOTAL SHEETS
2			4			24



SECTION A-A



SECTION B-B

BAR TYPES

BILL OF MATERIAL

END BENT #1

BAR	NO.	SIZE	TYPE	LENGTH	WEIGHT
B1	8	#9	1	40'-6"	1102
B2	4	#5	STR	38'-2"	159
B3	8	#4	STR	20'-4"	109
B4	10	#4	STR	2'-8"	18
B5	4	#4	STR	16'-0"	43
H1	40	#6	STR	12'-8"	761
S1	37	#4	2	3'-5"	84
S2	37	#4	3	9'-0"	222
S3	32	#4	5	6'-6"	139
U1	11	#4	4	5'-8"	42
V1	70	#4	STR	5'-6"	257
V2	20	#5	STR	8'-0"	167
V3	20	#5	STR	8'-7"	179

REINFORCING STEEL LBS. 3282

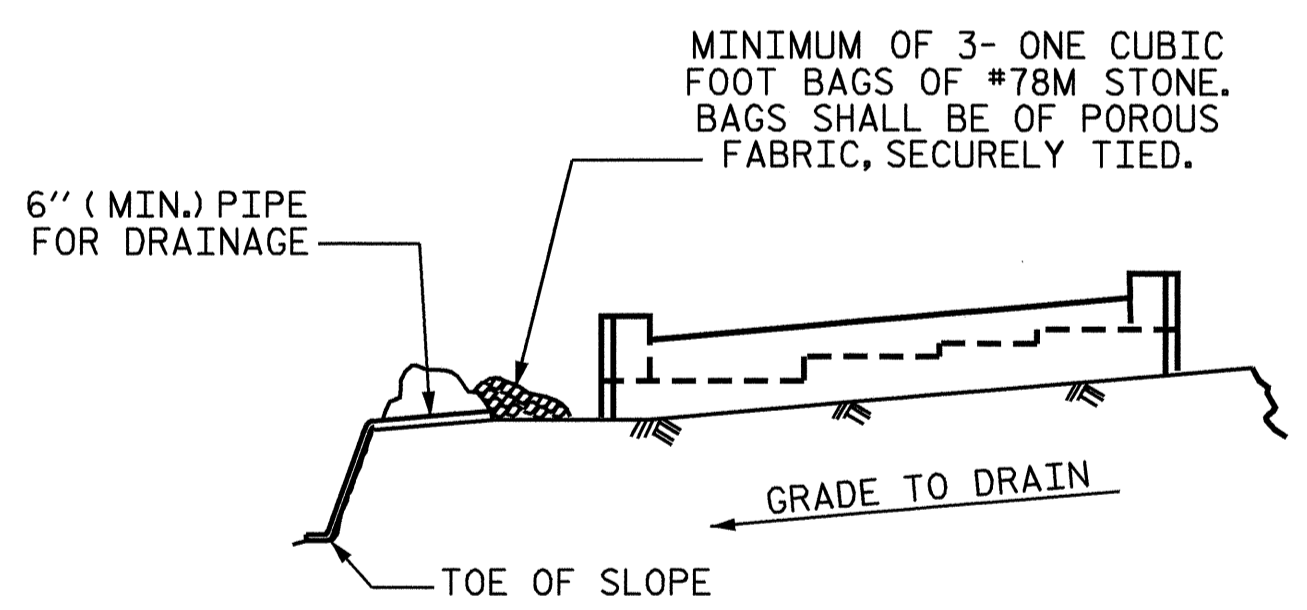
CLASS A CONCRETE BREAKDOWN:

POUR 1 CAP (CAP & LOWER PART OF WINGS) C.Y. 17.0

TOTAL C.Y. 17.0

HP 12 X 53 STEEL PILES
NUMBER = 8 LIN. FT. = 160

ALL BAR DIMENSIONS ARE OUT TO OUT.



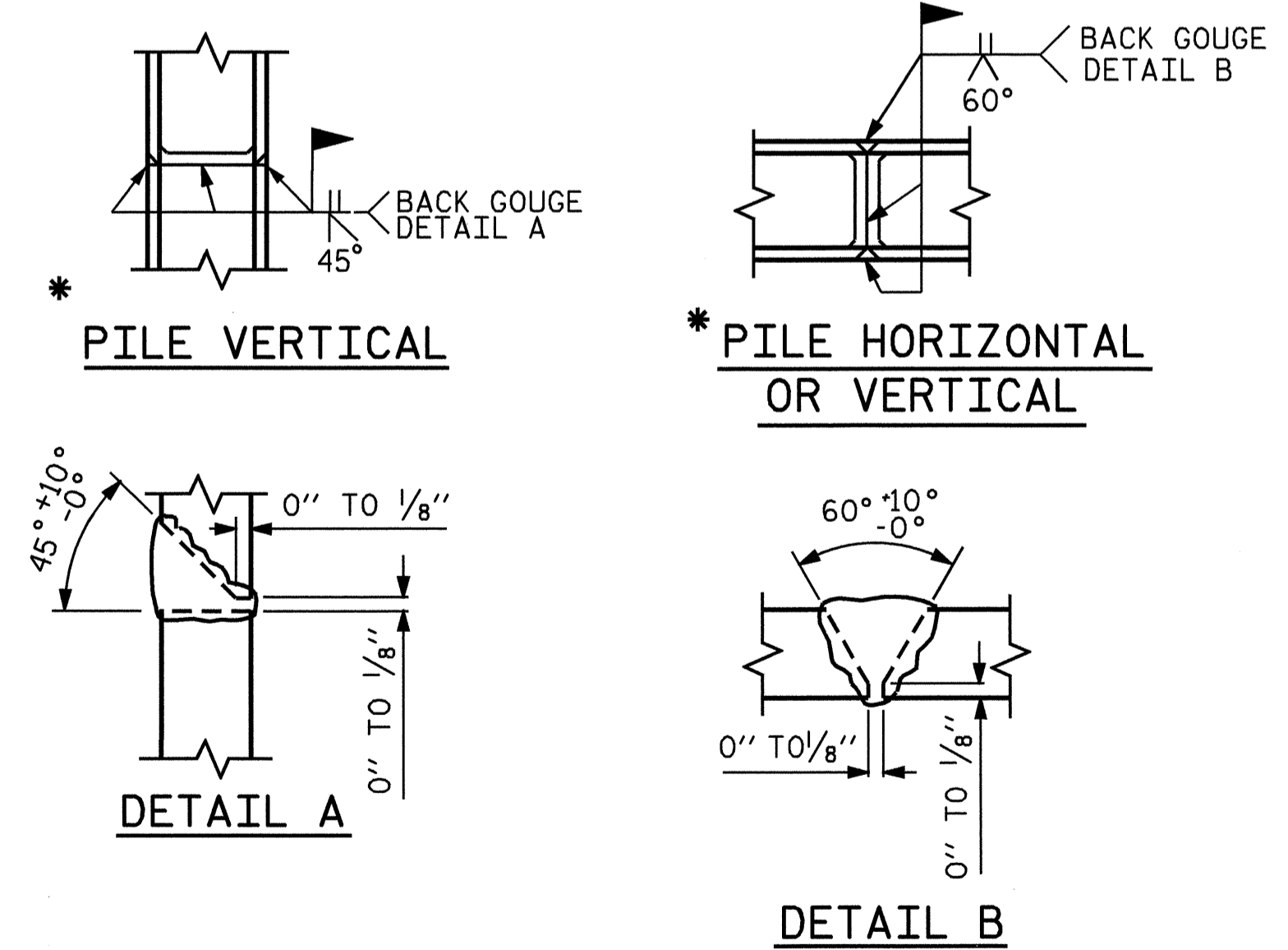
MINIMUM OF 3- ONE CUBIC FOOT BAGS OF #78M STONE. BAGS SHALL BE OF POROUS FABRIC, SECURELY TIED.

BAGGED STONE AND PIPE SHALL BE PLACED IMMEDIATELY AFTER COMPLETION OF END BENT EXCAVATION. PIPE MAY BE EITHER CONCRETE, CORRUGATED STEEL, CORRUGATED ALUMINUM ALLOY, OR CORRUGATED PLASTIC. PERFORATED PIPE WILL NOT BE ALLOWED.

BAGGED STONE SHALL REMAIN IN PLACE UNTIL THE ENGINEER DIRECTS THAT IT BE REMOVED. THE CONTRACTOR SHALL REMOVE AND DISPOSE OF SILT ACCUMULATIONS AT BAGGED STONE WHEN SO DIRECTED BY THE ENGINEER. BAGS SHALL BE REMOVED AND REPLACED WHENEVER THE ENGINEER DETERMINES THAT THEY HAVE DETERIORATED AND LOST THEIR EFFECTIVENESS.

NO SEPARATE PAYMENT WILL BE MADE FOR THIS WORK AND THE ENTIRE COST OF THIS WORK SHALL BE INCLUDED IN THE UNIT CONTRACT PRICE BID FOR THE SEVERAL PAY ITEMS.

TEMPORARY DRAINAGE AT END BENT



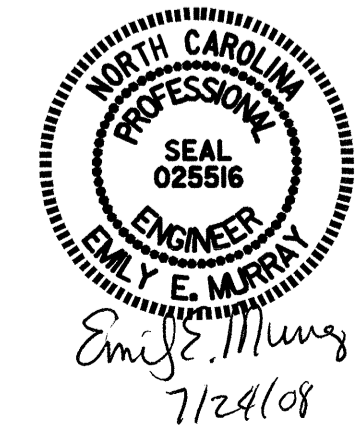
PILE SPLICE DETAILS

* POSITION OF PILE DURING WELDING.

PROJECT NO. B-4263
RUTHERFORD COUNTY
 STATION: 15+34.93 -L-
 SHEET 3 OF 3

STATE OF NORTH CAROLINA
 DEPARTMENT OF TRANSPORTATION
 RALEIGH

SUBSTRUCTURE
 INTEGRAL
 END BENT #1



REVISIONS					SHEET NO.
NO.	BY:	DATE:	NO.	BY:	DATE:
1			3		
2			4		

TOTAL SHEETS 24

NOTES

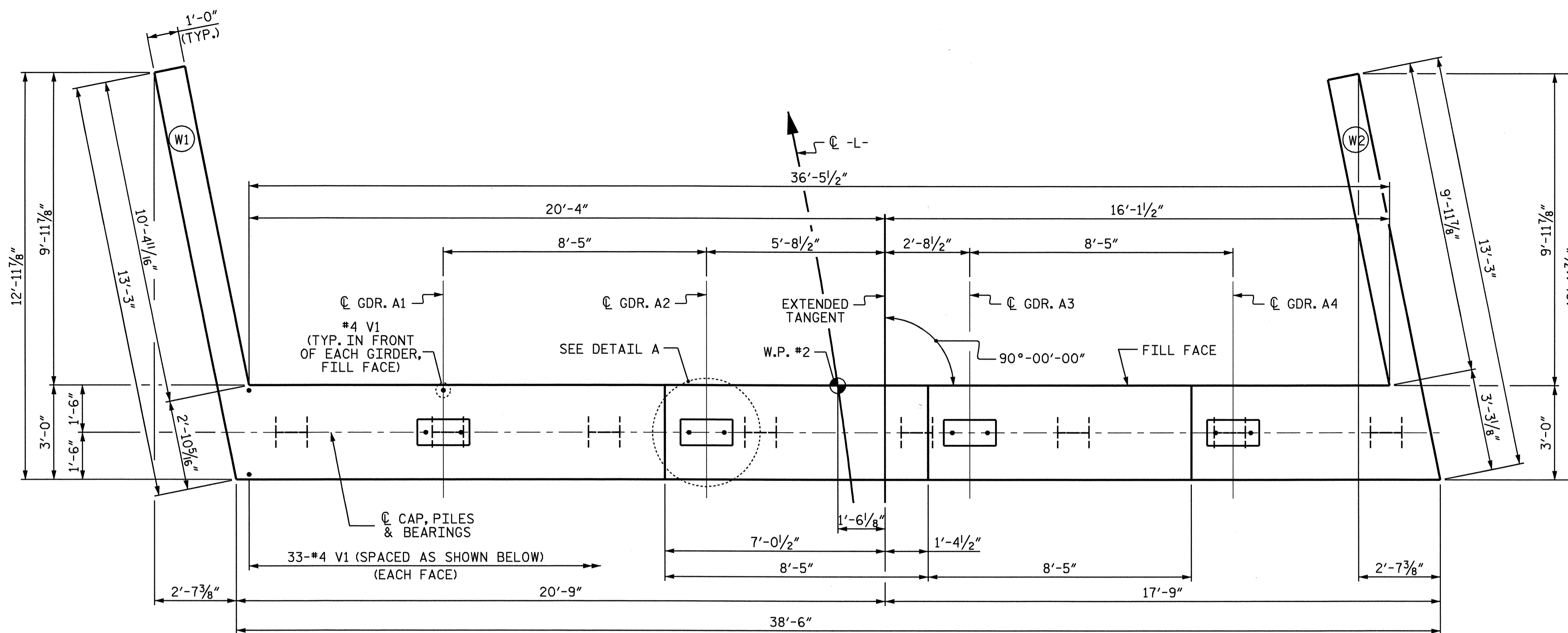
THE CONTRACTOR'S ATTENTION IS CALLED TO THE FACT THAT THE UPPER PART OF THE END BENT WINGS ARE POURED WITH POUR #2 OF THE SUPERSTRUCTURE.

SEE SUPERSTRUCTURE SHEETS FOR UPPER PART OF INTEGRAL END BENT DETAILS.

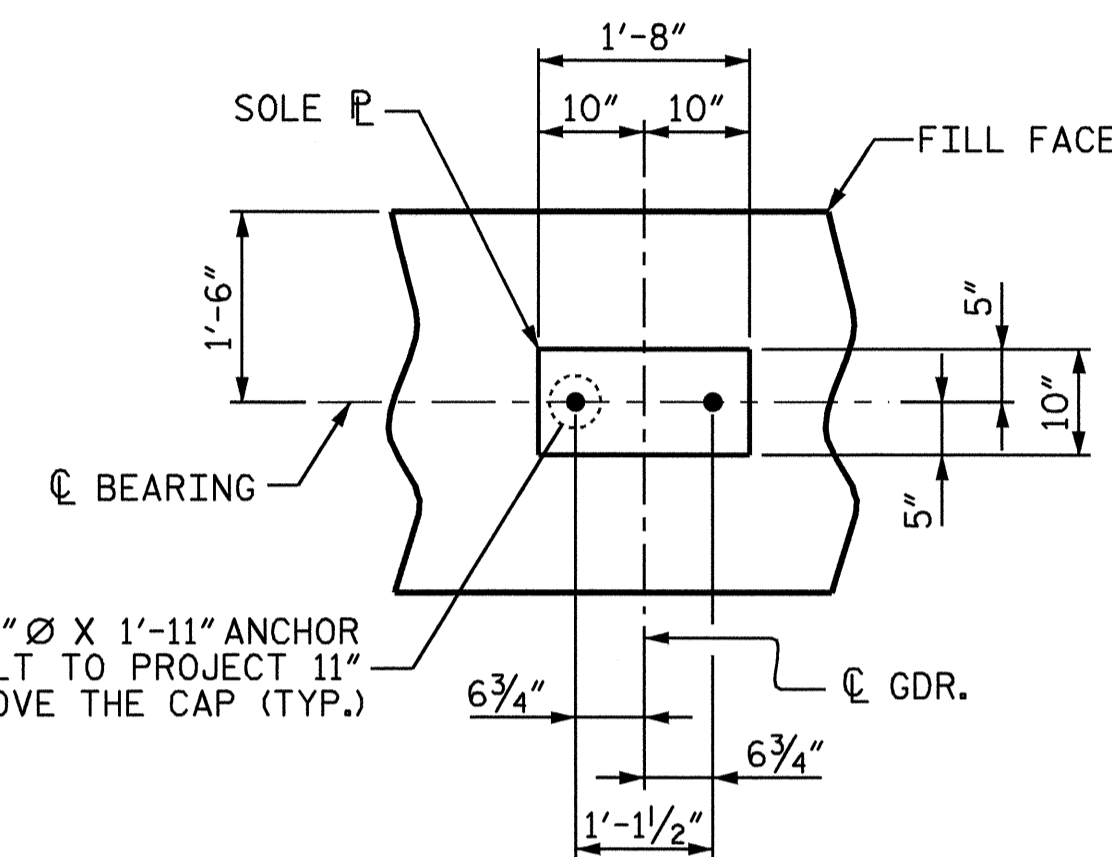
THE CONTRACTOR SHALL PROVIDE FOR INSTALLATION OF THE 4" DIAMETER DRAIN PIPE THROUGH THE WING WALL AS REQUIRED FOR REINFORCED BRIDGE APPROACH FILLS, SEE THE ROADWAY PLANS. REINFORCING STEEL IN THE WING WALL MAY BE SHIFTED AS NECESSARY TO CLEAR THE DRAIN PIPE.

STIRRUPS IN CAP MAY BE SHIFTED AS NECESSARY TO CLEAR ANCHOR BOLTS.

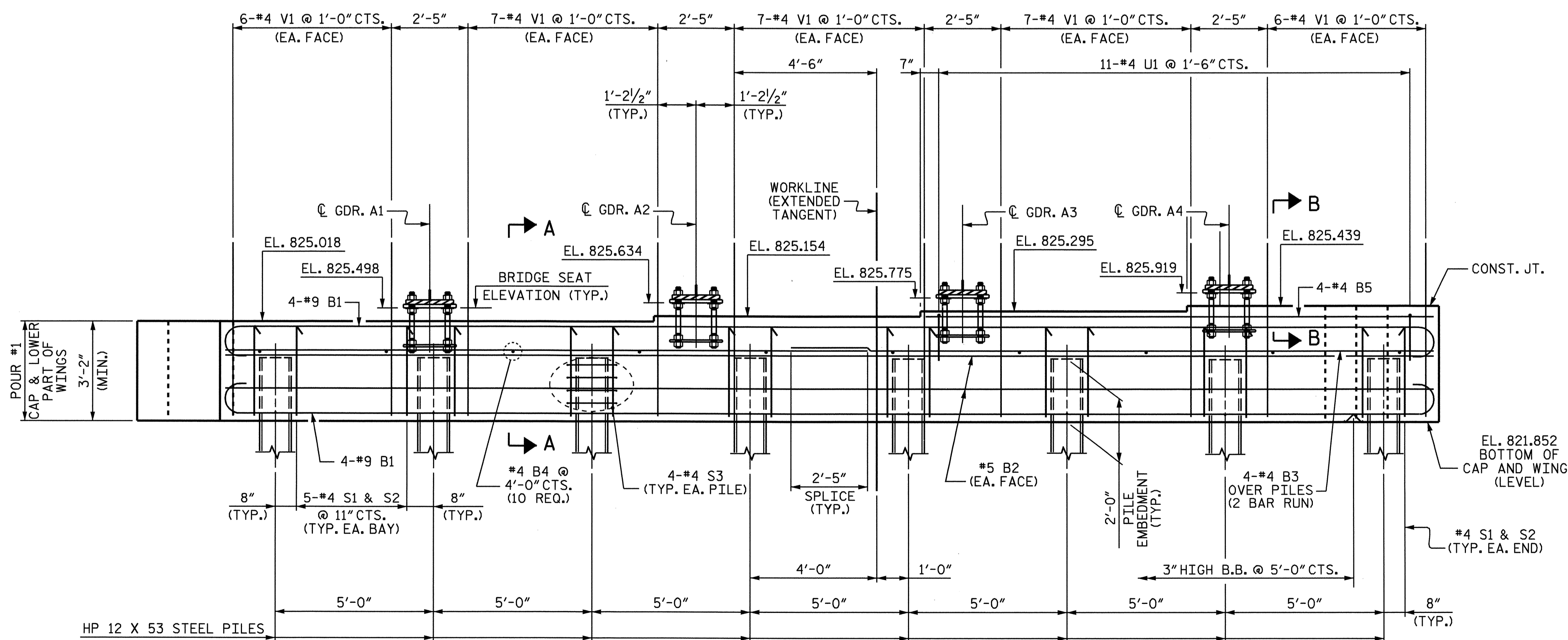
THE TOP SURFACE OF POUR #1 OF THE END BENT CAP AND WINGS, EXCLUDING THE OUTSIDE 4" AND THE BEARING AREA, SHALL BE RAKED TO A DEPTH OF 1/4".



PLAN

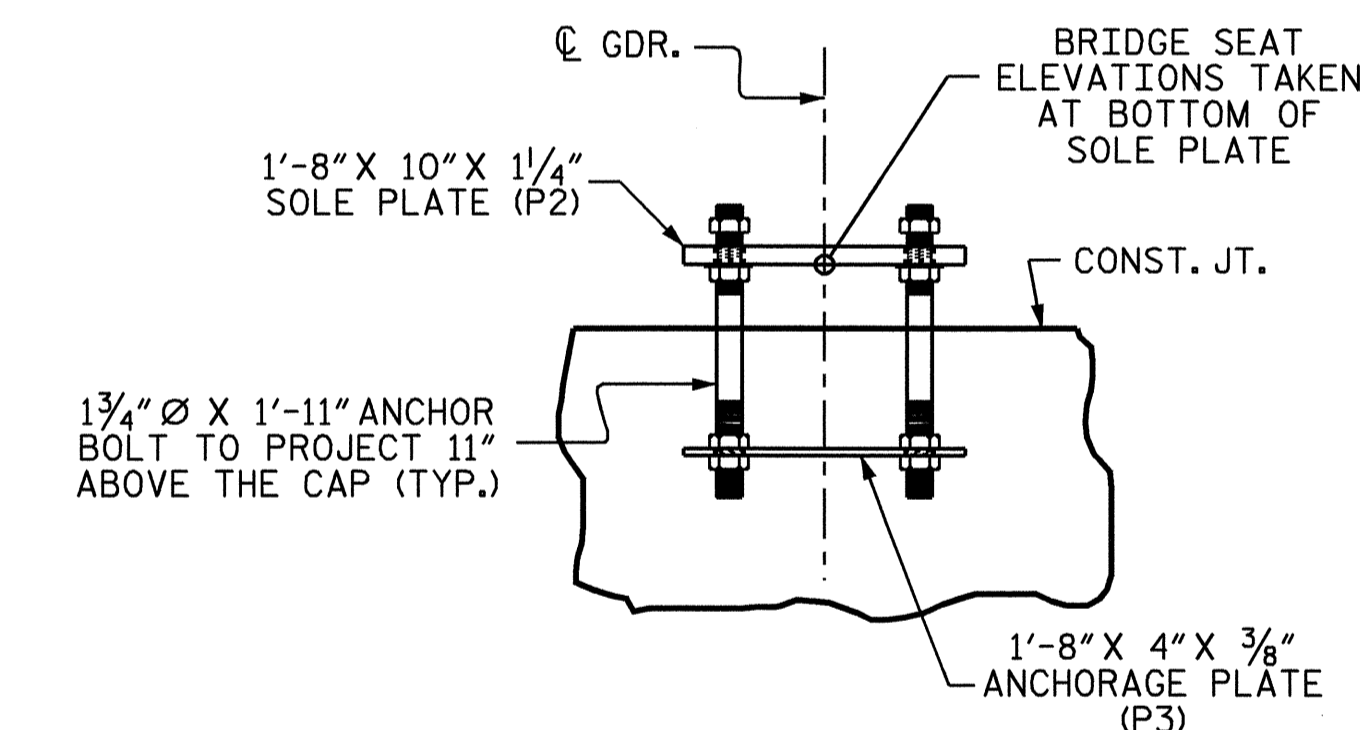


DETAIL A
(TYP. EA. GDR.)



ELEVATION

(UPPER PART OF WINGS NOT SHOWN FOR CLARITY)



ANCHORAGE DETAILS

PROJECT NO. B-4263
RUTHERFORD COUNTY
 STATION: 15+34.93 -L-

SHEET 1 OF 3

STATE OF NORTH CAROLINA
 DEPARTMENT OF TRANSPORTATION
 RALEIGH

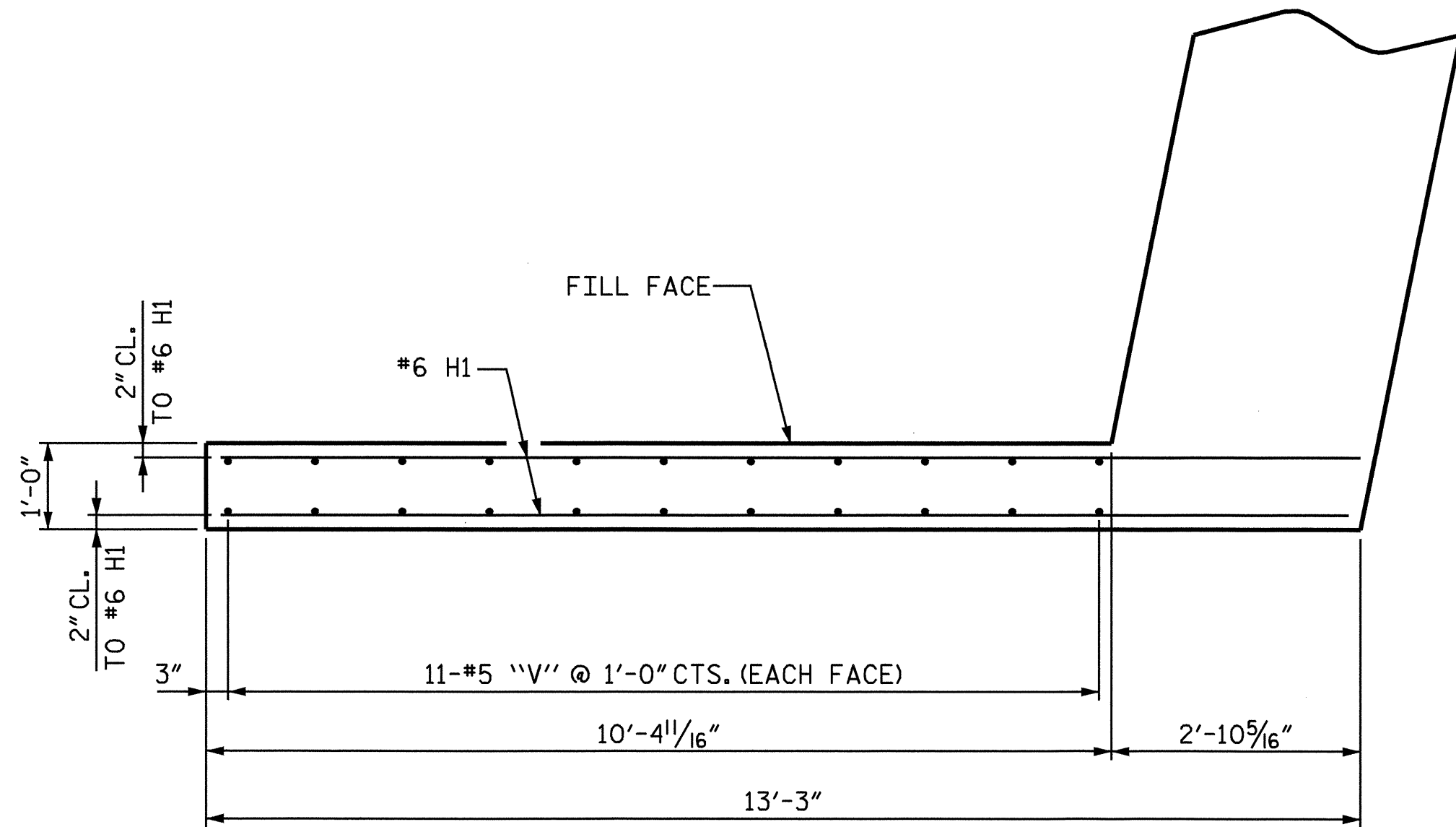
**SUBSTRUCTURE
 INTEGRAL
 END BENT #2**



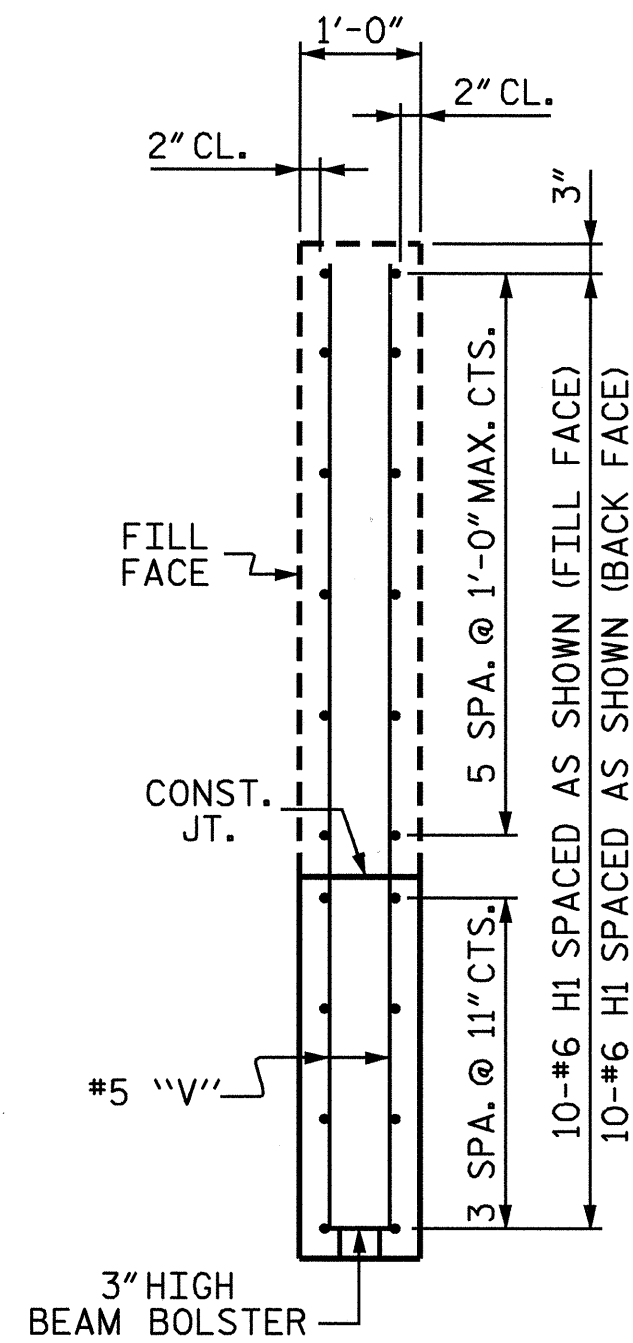
Emory E. Murray
 7/24/08

REVISIONS						SHEET NO. S-18
NO.	BY:	DATE:	NO.	BY:	DATE:	
1			3			TOTAL SHEETS 24
2			4			

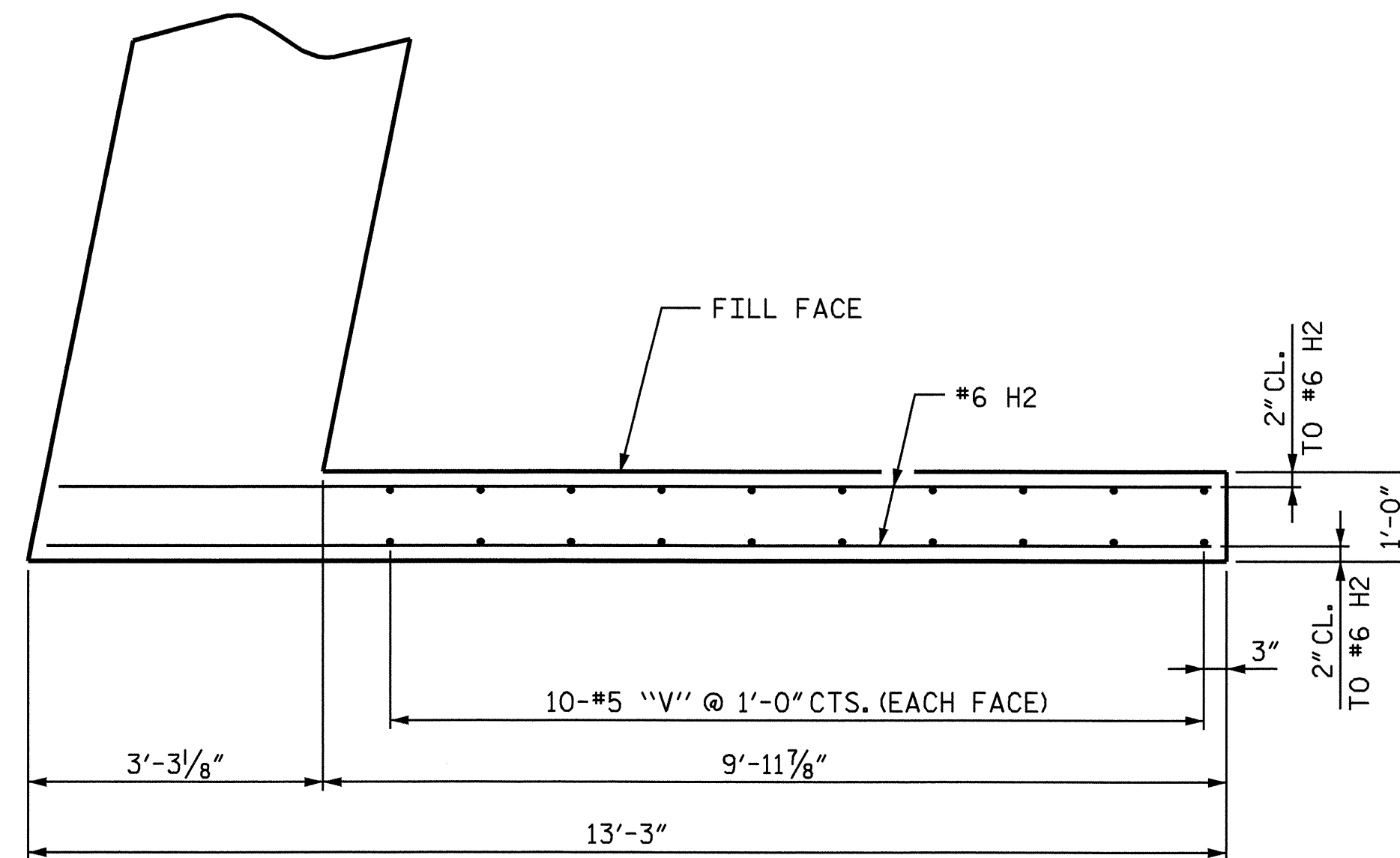
DRAWN BY: A. SORSENGINH DATE: 5/12/08
 CHECKED BY: T.L. AVERETTE DATE: 6/4/08



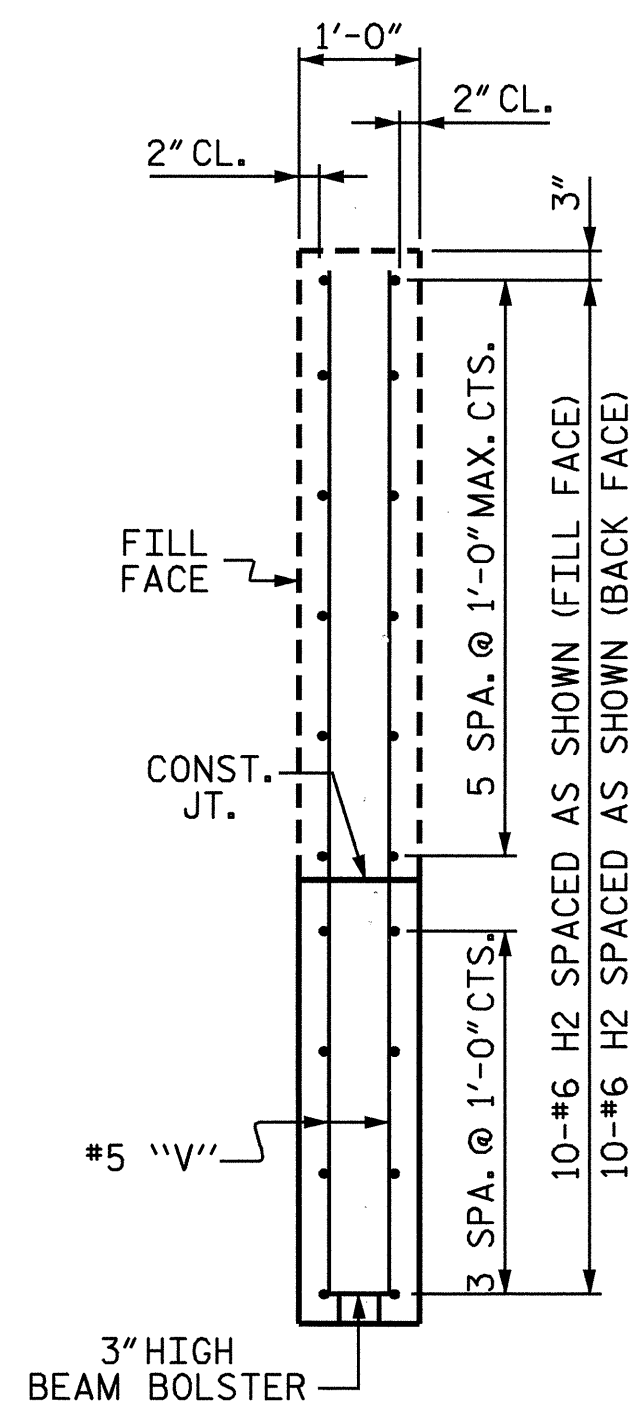
PLAN OF LEFT WING W1



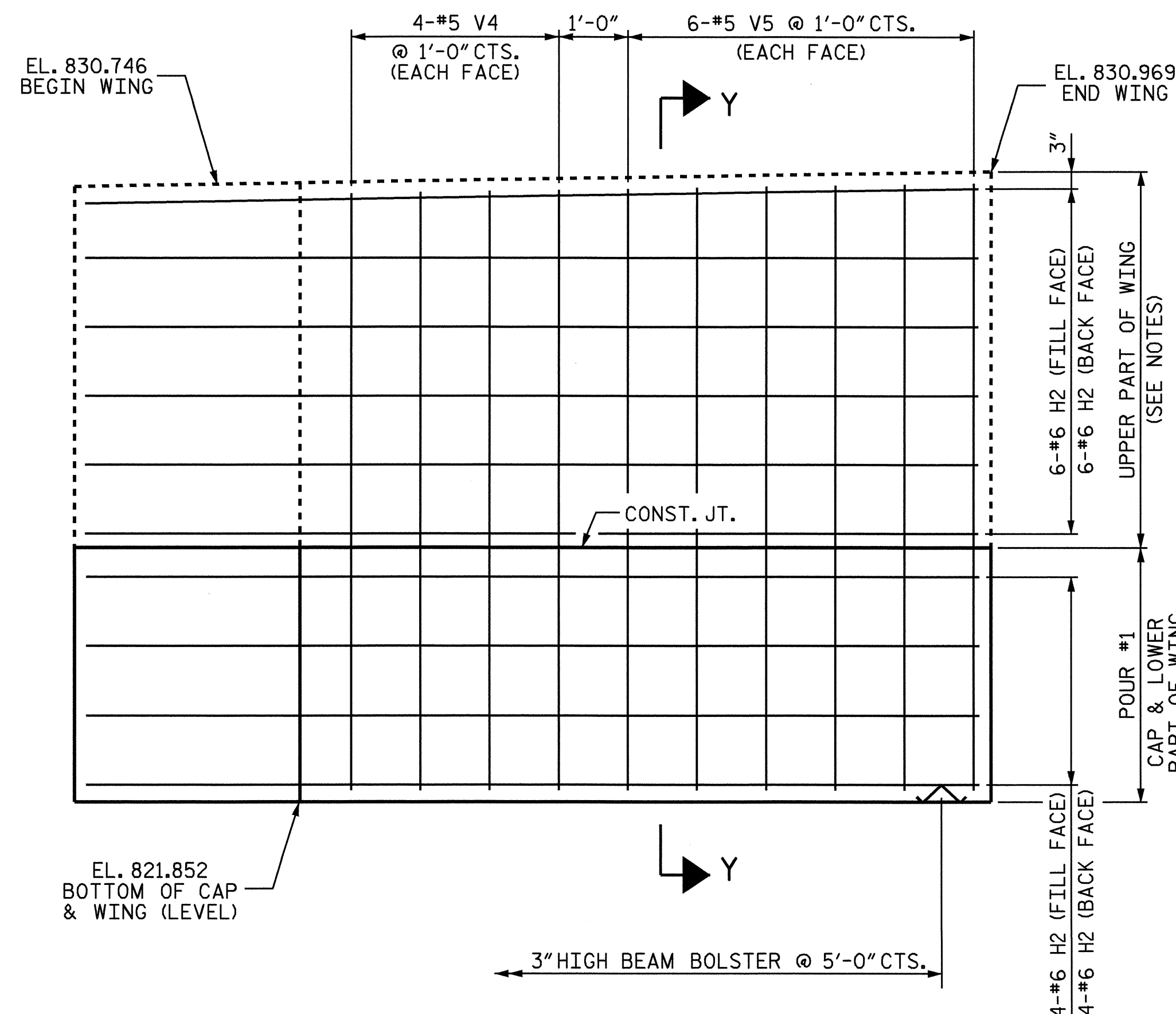
SECTION X-X



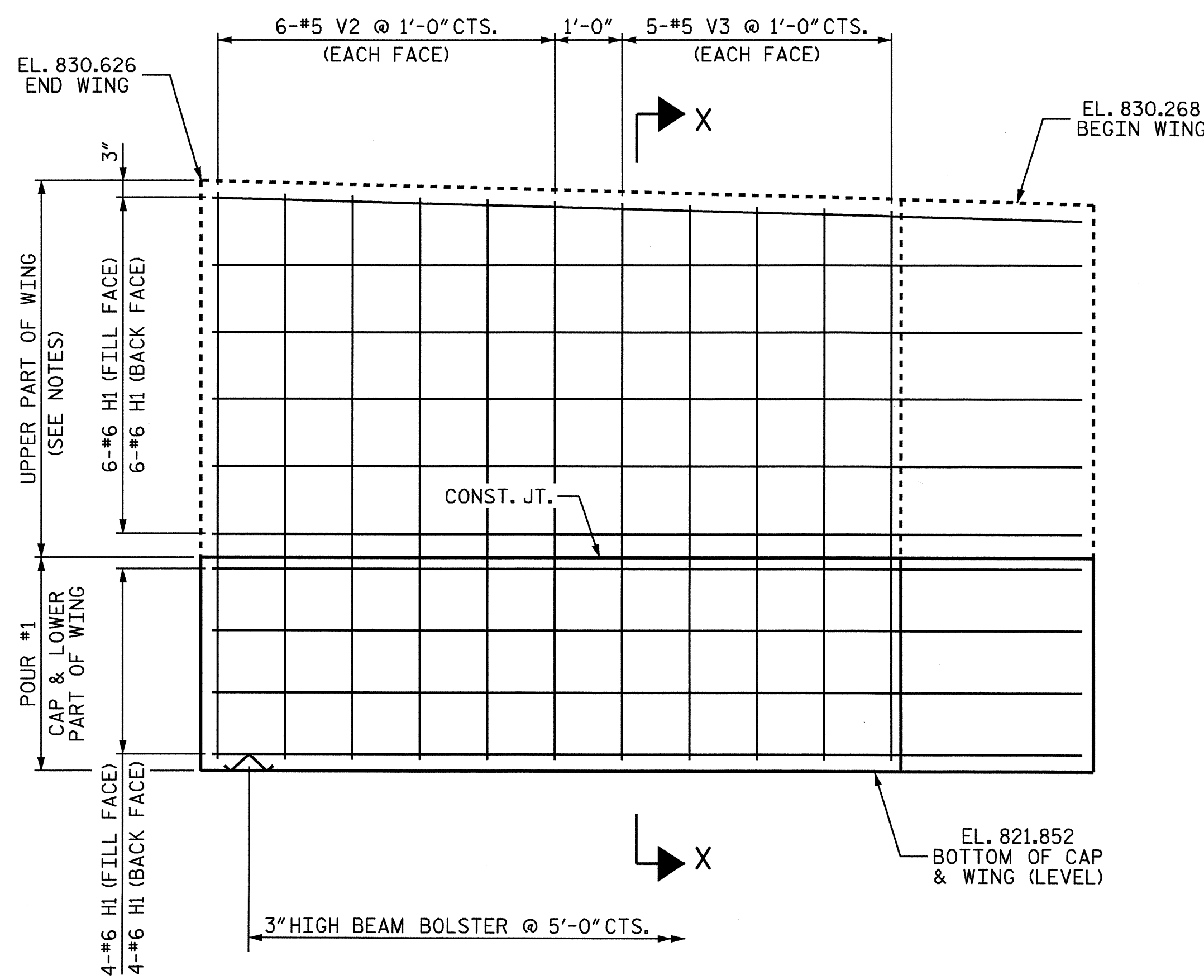
PLAN OF RIGHT WING W2



SECTION Y-Y



ELEVATION OF RIGHT WING W2



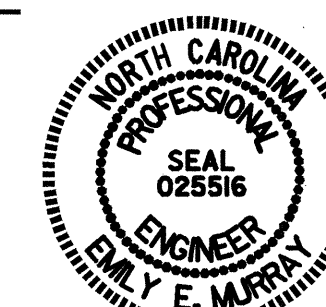
ELEVATION OF LEFT WING W1

PROJECT NO. B-4263
RUTHERFORD COUNTY
 STATION: 15+34.93 -L-

SHEET 2 OF 3

STATE OF NORTH CAROLINA
 DEPARTMENT OF TRANSPORTATION
 RALEIGH

SUBSTRUCTURE
 INTEGRAL
 END BENT #2

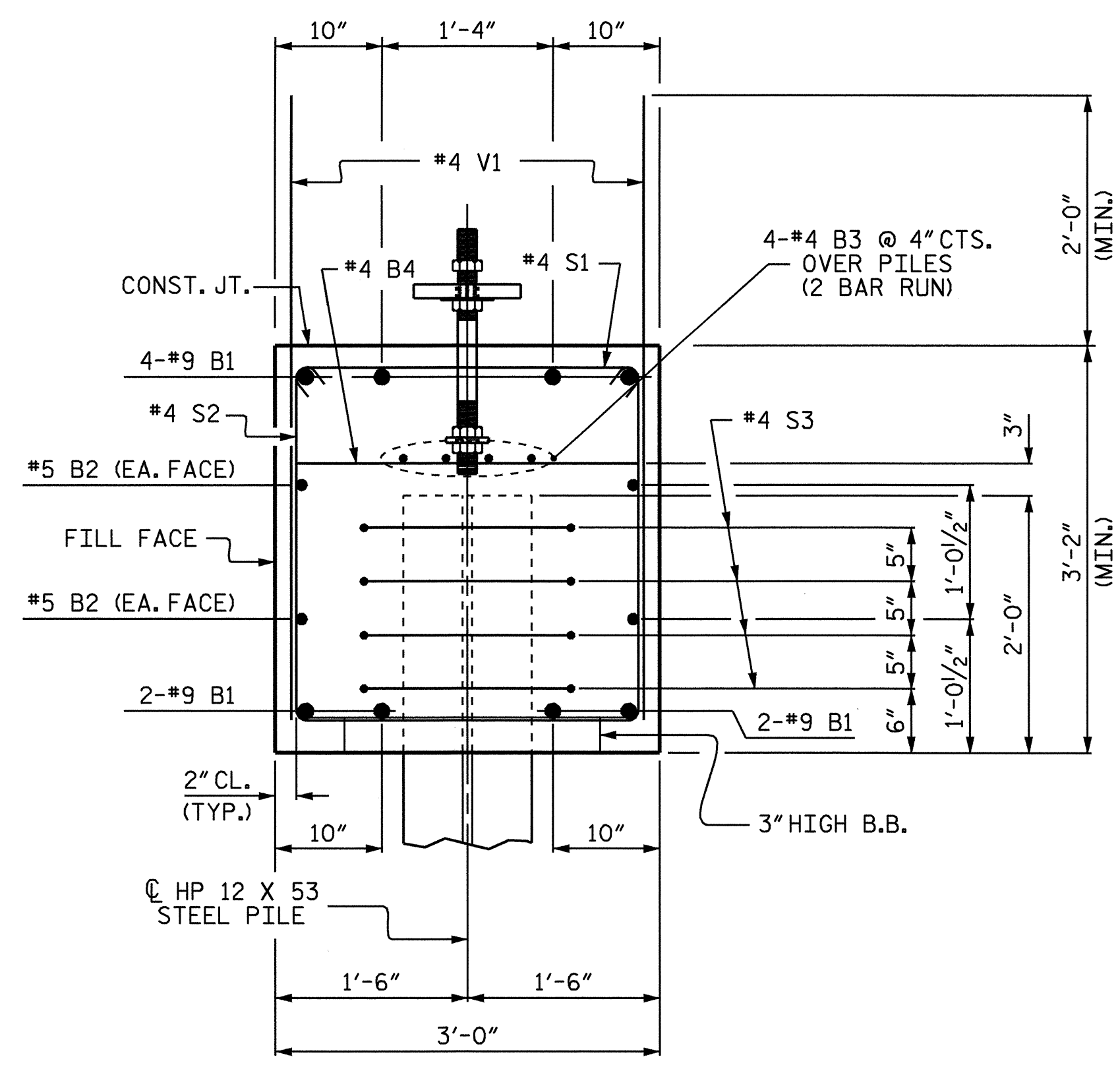


DRAWN BY: A. SORSENGINH DATE: 5/13/08
 CHECKED BY: J.L. AVERETTE DATE: 6/4/08

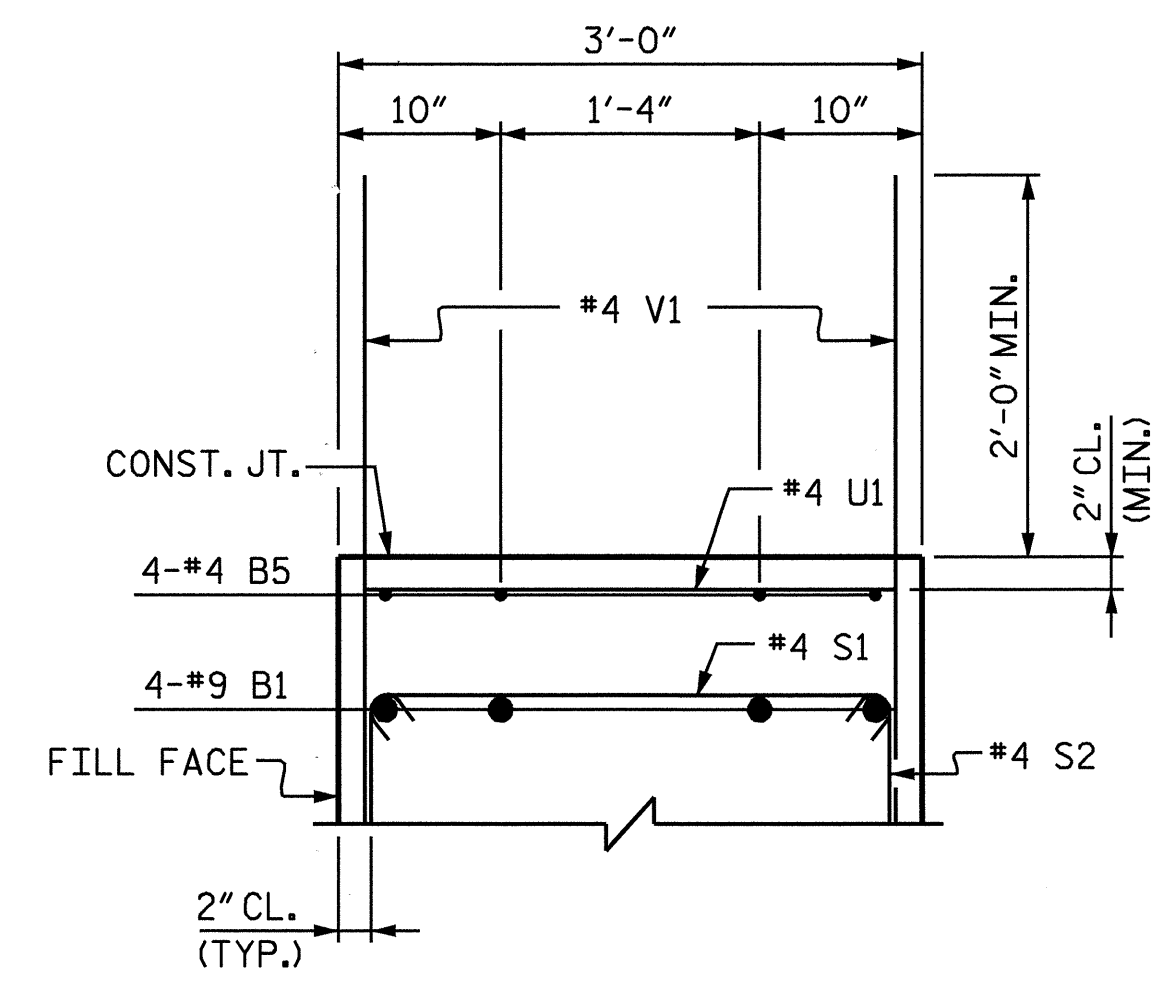
24-JUN-2008 14:48
 g:\t\projects-b\b4263\structures\finalplans\b4263_sd.e*
 taverette

REVISIONS						TOTAL SHEETS
NO.	BY:	DATE:	NO.	BY:	DATE:	24
1			3			
2			4			

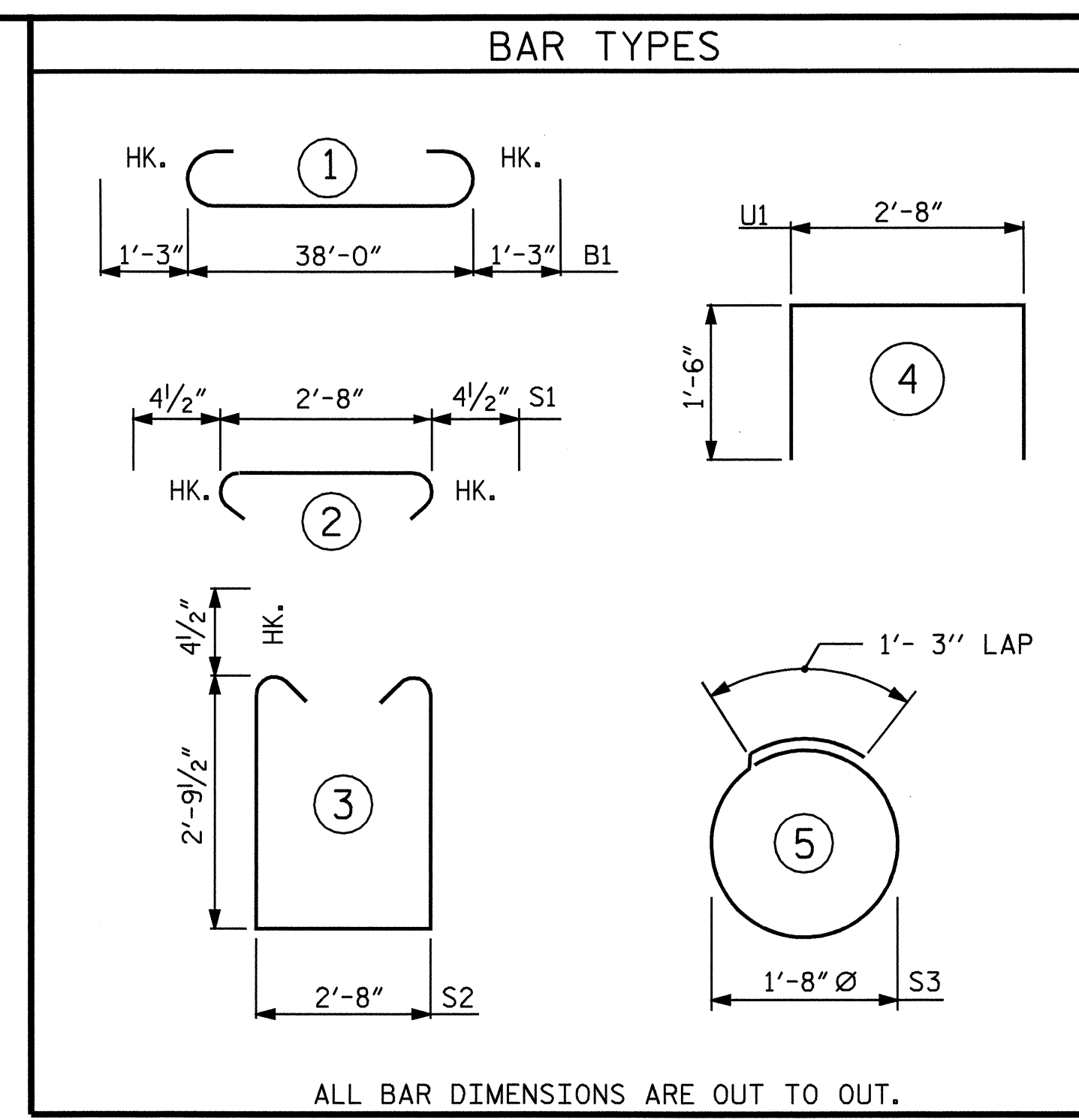
SHEET NO.
 S-19



SECTION A-A

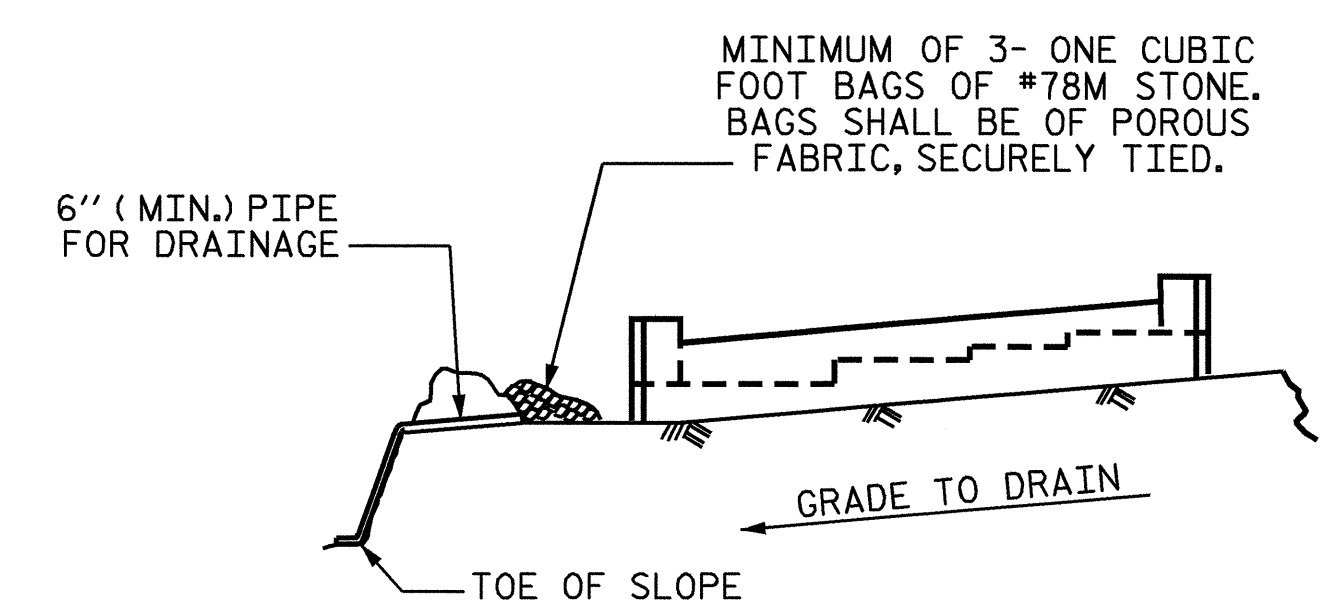


SECTION B-B



ALL BAR DIMENSIONS ARE OUT TO OUT.

BILL OF MATERIAL					
END BENT #2					
BAR	NO.	SIZE	TYPE	LENGTH	WEIGHT
B1	8	#9		40'-6"	1102
B2	4	#5	STR	38'-2"	159
B3	8	#4	STR	20'-4"	109
B4	10	#4		2'-8"	18
B5	4	#4	STR	15'-5"	41
H1	20	#6	STR	12'-11"	388
H2	20	#6	STR	12'-9"	383
S1	37	#4	2	3'-5"	84
S2	37	#4	3	9'-0"	222
S3	32	#4	5	6'-6"	139
U1	11	#4	4	5'-8"	42
V1	66	#4	STR	5'-6"	242
V2	12	#5	STR	8'-3"	103
V3	10	#5	STR	8'-1"	84
V4	8	#5	STR	8'-7"	72
V5	12	#5	STR	8'-8"	108
REINFORCING STEEL					LBS. 3296
CLASS A CONCRETE BREAKDOWN:					
POUR 1 CAP (CAP & LOWER PART OF WINGS) C.Y.					17.0
TOTAL C.Y.					17.0
HP 12 X 53 STEEL PILES					
NUMBER = 8					LIN. FT. = 240

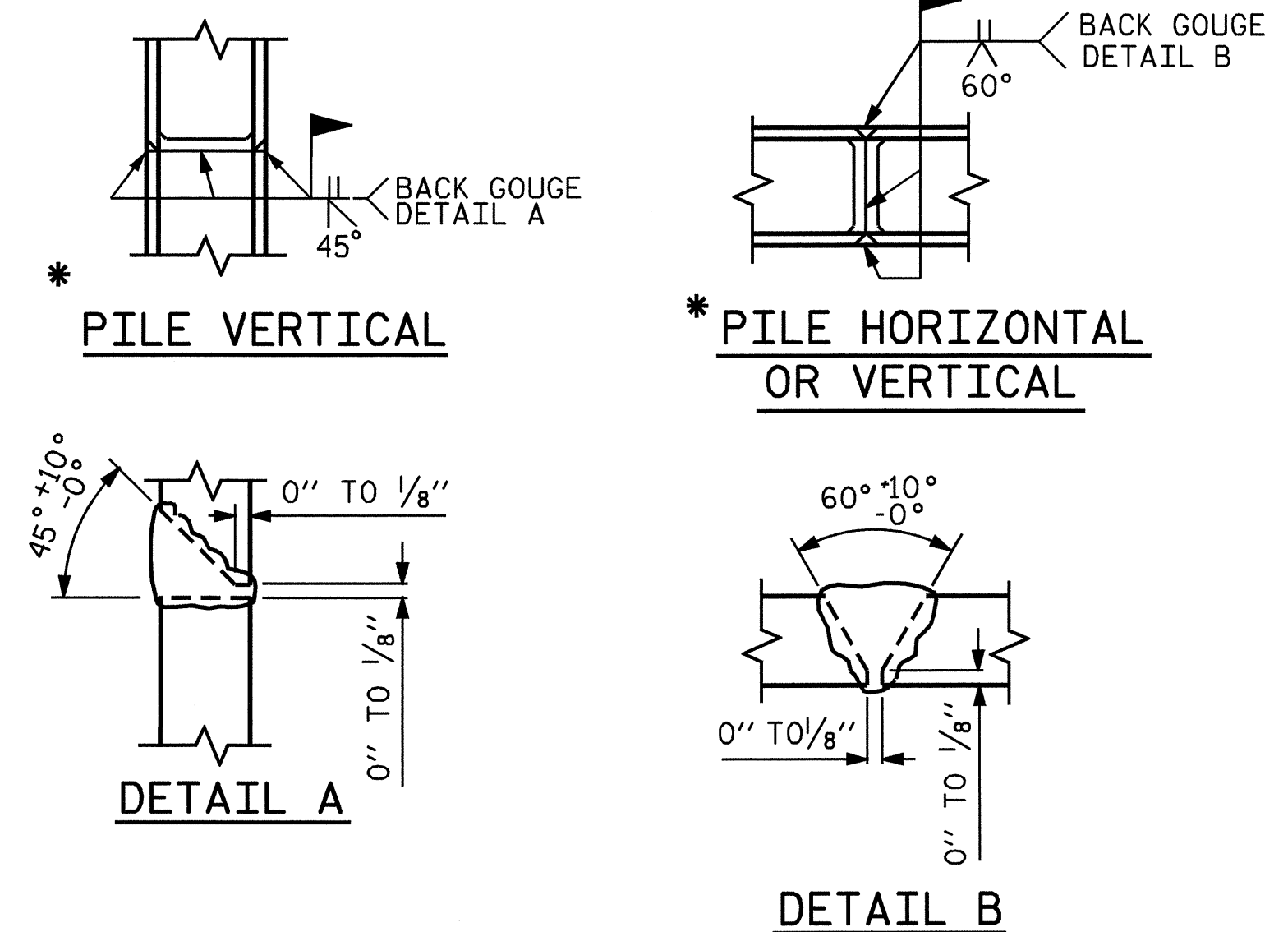


BAGGED STONE AND PIPE SHALL BE PLACED IMMEDIATELY AFTER COMPLETION OF END BENT EXCAVATION. PIPE MAY BE EITHER CONCRETE, CORRUGATED STEEL, CORRUGATED ALUMINUM ALLOY, OR CORRUGATED PLASTIC. PERFORATED PIPE WILL NOT BE ALLOWED.

BAGGED STONE SHALL REMAIN IN PLACE UNTIL THE ENGINEER DIRECTS THAT IT BE REMOVED. THE CONTRACTOR SHALL REMOVE AND DISPOSE OF SILT ACCUMULATIONS AT BAGGED STONE WHEN SO DIRECTED BY THE ENGINEER. BAGS SHALL BE REMOVED AND REPLACED WHENEVER THE ENGINEER DETERMINES THAT THEY HAVE DETERIORATED AND LOST THEIR EFFECTIVENESS.

NO SEPARATE PAYMENT WILL BE MADE FOR THIS WORK AND THE ENTIRE COST OF THIS WORK SHALL BE INCLUDED IN THE UNIT CONTRACT PRICE BID FOR THE SEVERAL PAY ITEMS.

TEMPORARY DRAINAGE AT END BENT



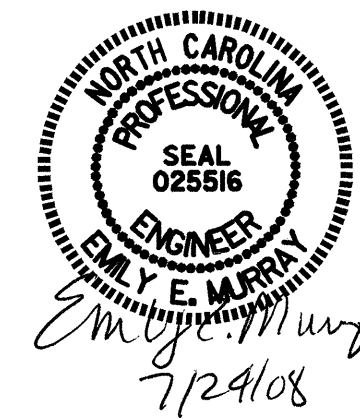
PILE SPLICE DETAILS

* POSITION OF PILE DURING WELDING.

PROJECT NO. B-4263
RUTHERFORD COUNTY
 STATION: 15+34.93 -L-
 SHEET 3 OF 3

STATE OF NORTH CAROLINA
 DEPARTMENT OF TRANSPORTATION
 RALEIGH

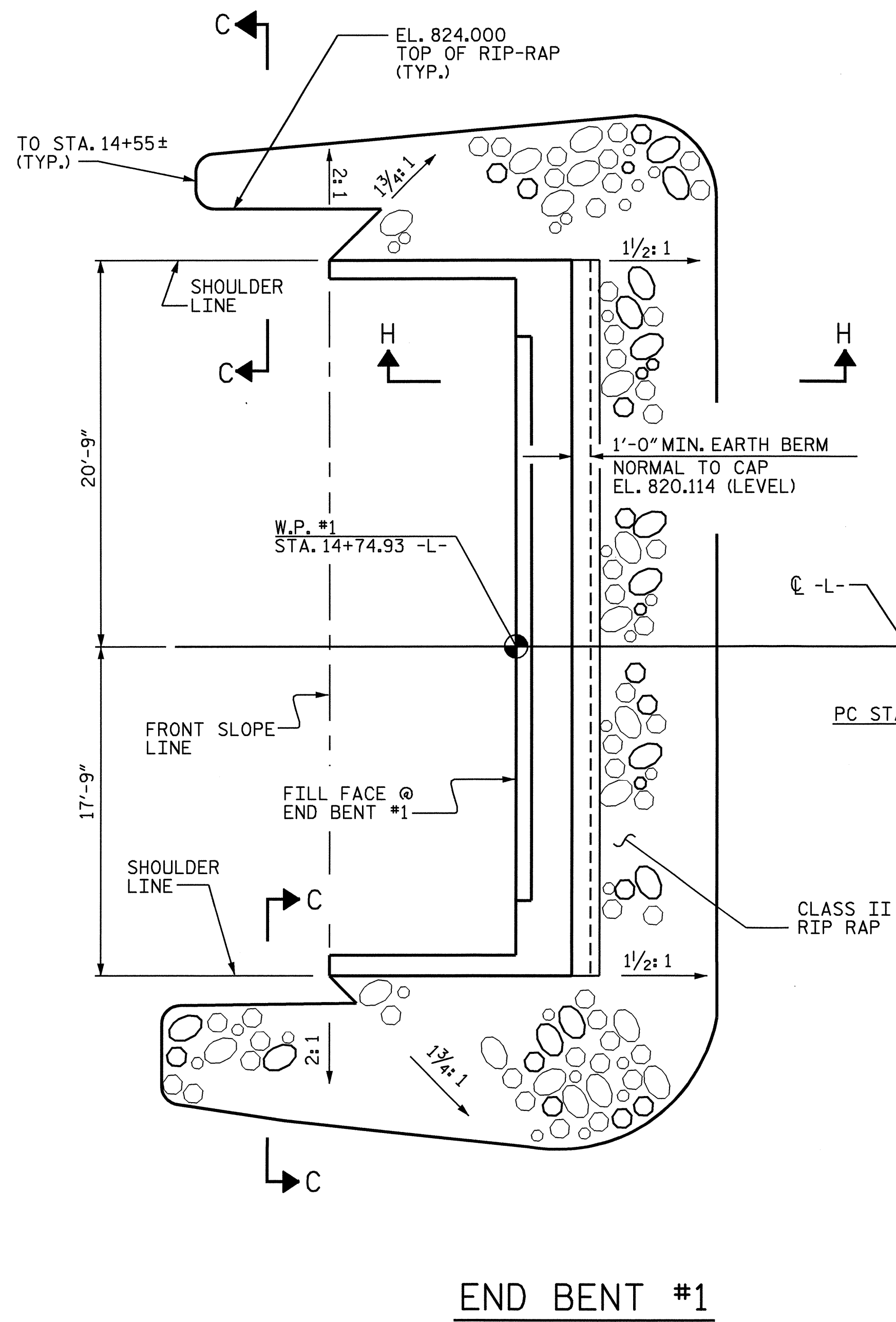
SUBSTRUCTURE
 INTEGRAL
 END BENT #2



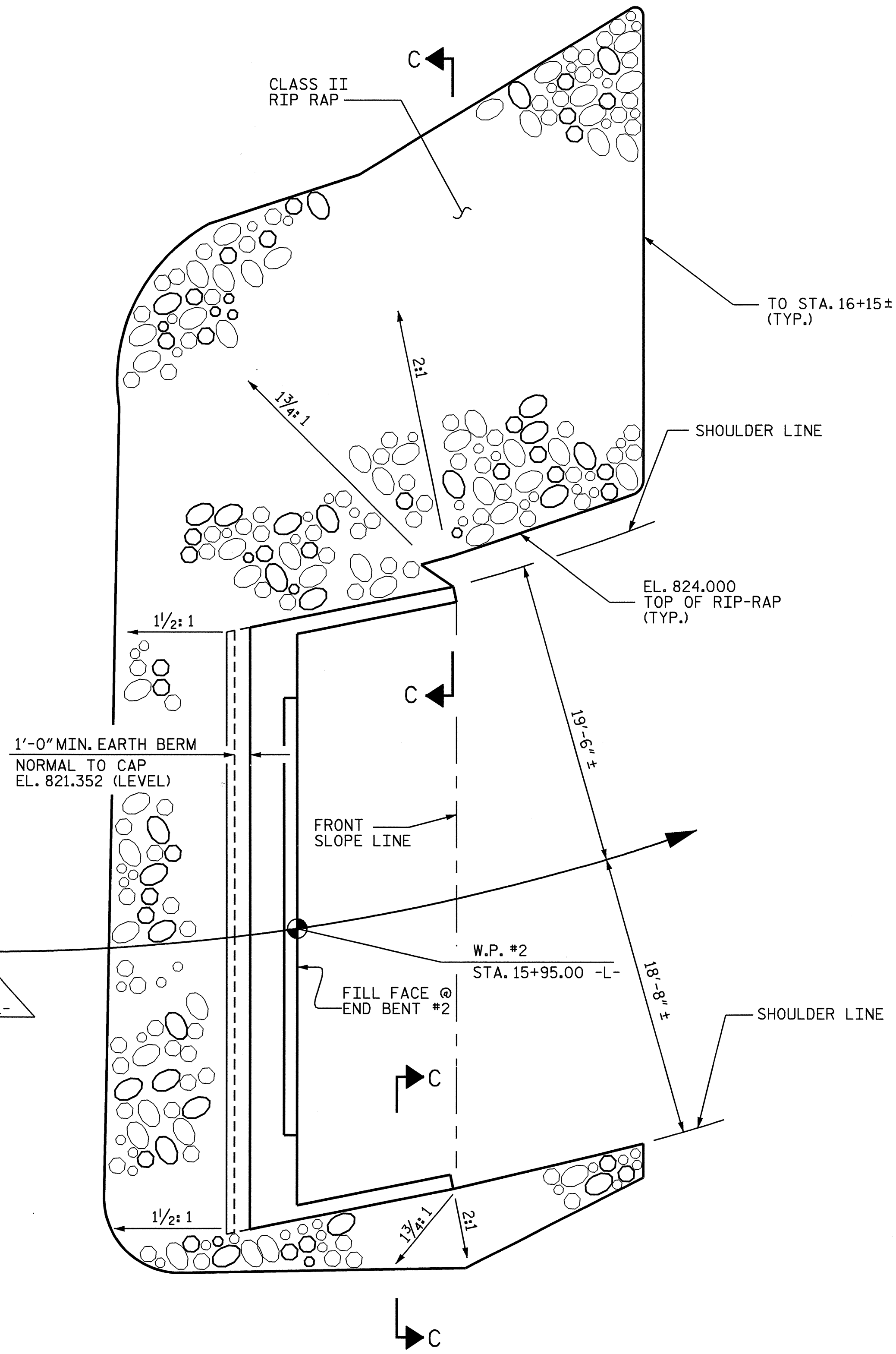
DRAWN BY: A. SORSENGINH DATE: 5/13/08
 CHECKED BY: T.L. AVERETTE DATE: 6/4/08

REVISIONS						SHEET NO.
NO.	BY:	DATE:	NO.	BY:	DATE:	S-20
1			3			TOTAL SHEETS
2			4			24

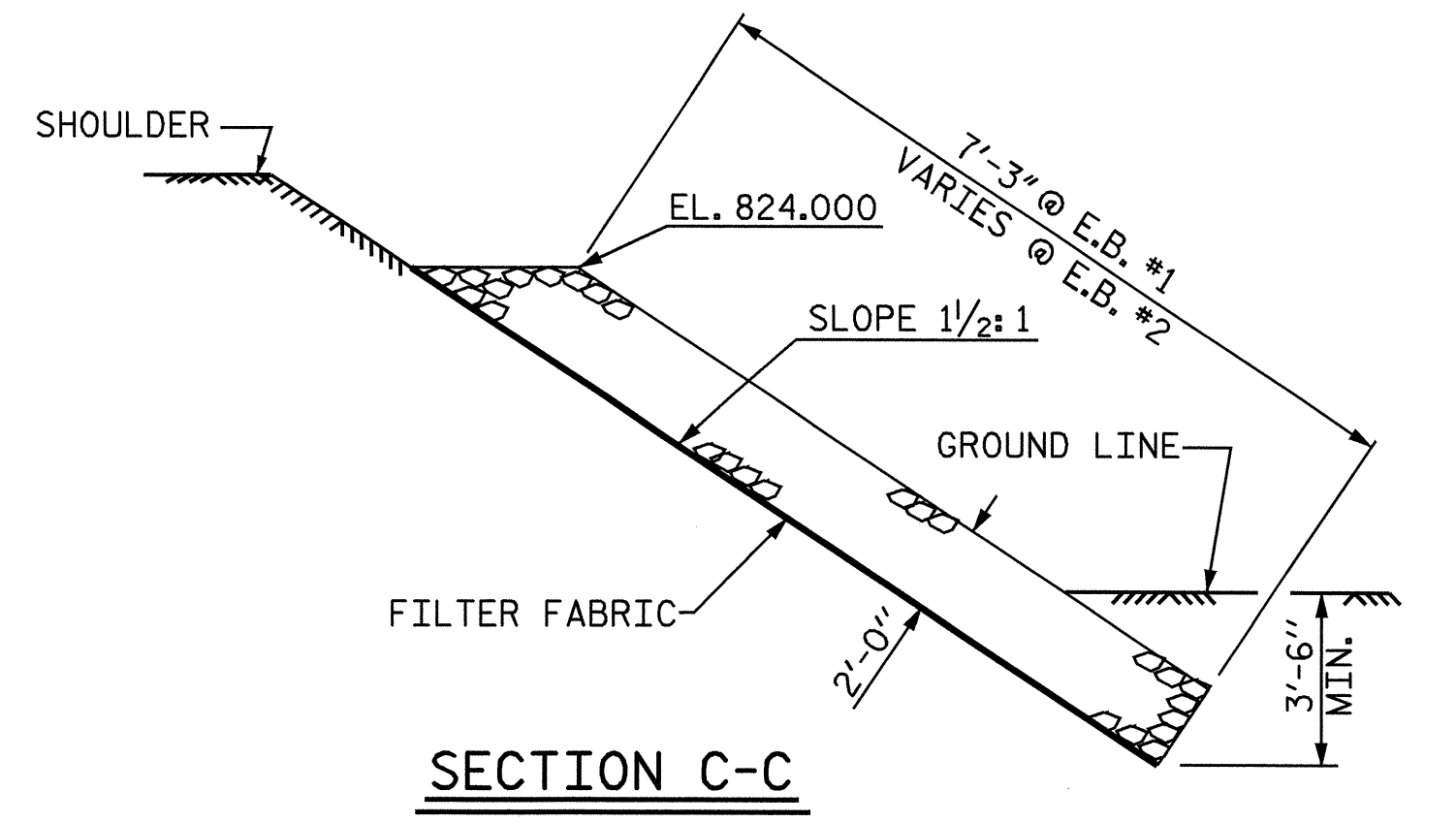
ESTIMATED QUANTITIES		
BRIDGE @ STA. 15+34.93 -L-	RIP RAP CLASS II	FILTER FABRIC FOR DRAINAGE
	TONS	SQUARE YARDS
END BENT 1	83	92
END BENT 2	224	248
TOTAL	307	340



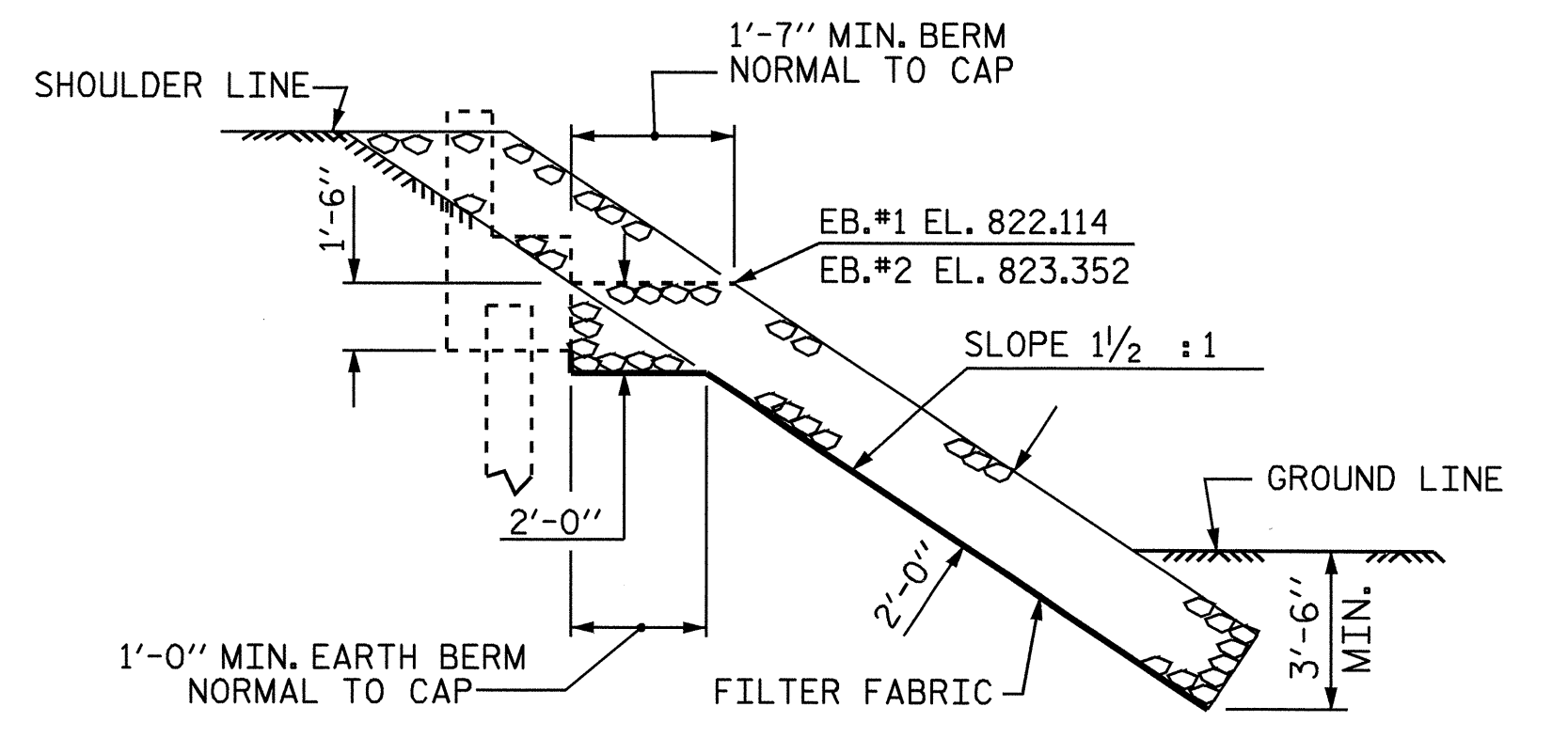
END BENT #1



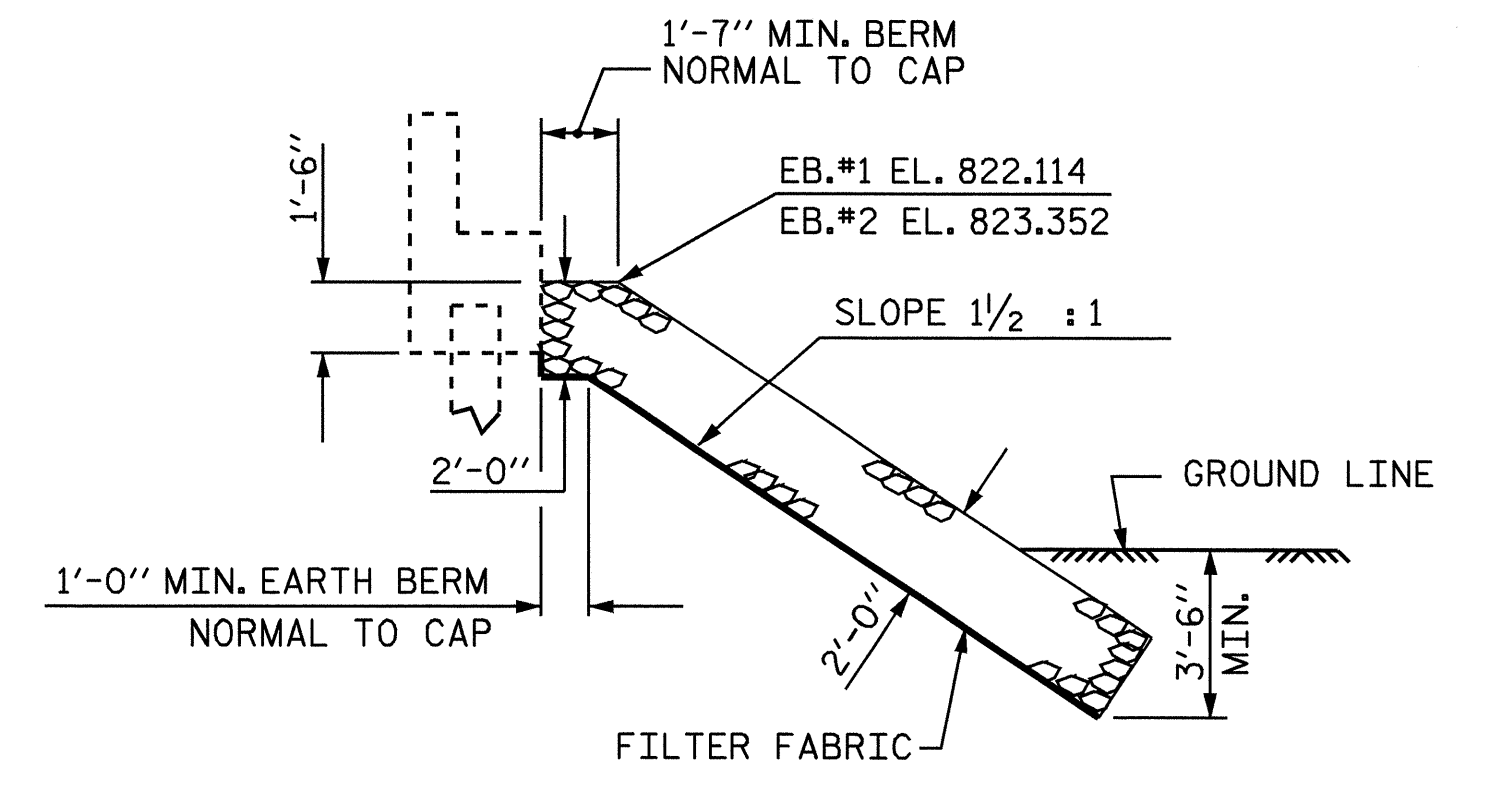
END BENT #2



SECTION C-C



SECTION H-H



SECTION C-C WITH BERM RIP RAPPED

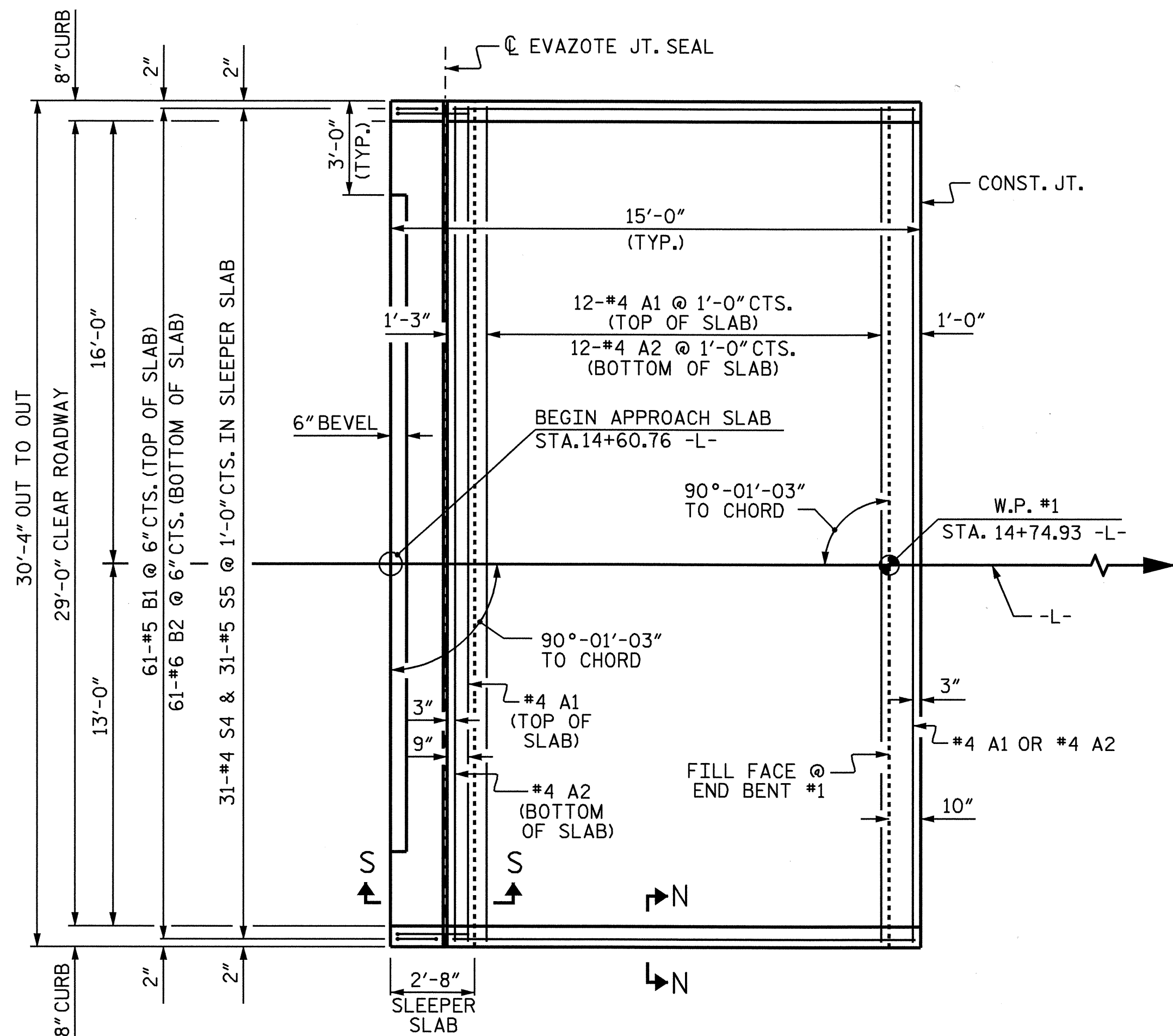
PROJECT NO. B-4263
RUTHERFORD COUNTY
 STATION: 15+34.93 -L-

STATE OF NORTH CAROLINA
 DEPARTMENT OF TRANSPORTATION
 RALEIGH
 STANDARD
 RIP RAP DETAILS

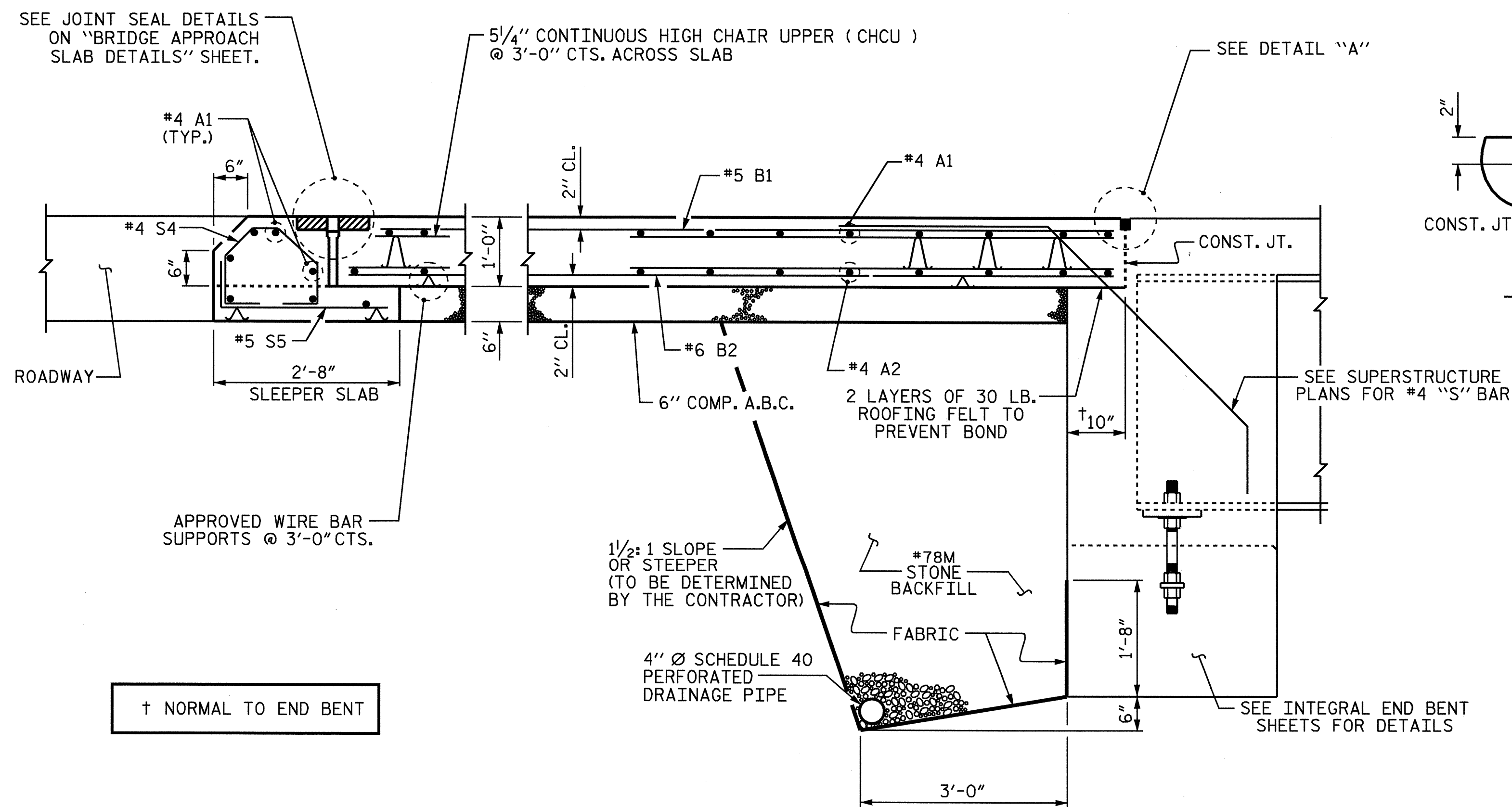


DRAWN BY : C.McD./M.D.PISO DATE : 06/2008
 CHECKED BY : PEGGY PARISI DATE : 06/2008

REVISIONS						SHEET NO.
NO.	BY:	DATE:	NO.	BY:	DATE:	
1			3			TOTAL SHEETS
2			4			24



PLAN @ END BENT #1
 *4 A1 BARS IN SLEEPER SLAB NOT SHOWN FOR CLARITY.



SECTION THRU SLAB

NOTES

AREA BETWEEN THE WINGWALL AND APPROACH SLAB SHALL BE GRADED TO DRAIN THE WATER AWAY FROM THE FILL FACE OF THE BRIDGE AND SHALL BE PAVED. SEE ROADWAY PLANS.

THE 6" COMP. A.B.C. SHALL BE FLUSH WITH THE SLEEPER SLAB AND SHALL EXTEND 1'-0" OUTSIDE OF EACH EDGE OF THE APPROACH SLAB.

THE CONTRACTOR MAY USE 4" TYPE B-25.0B ASPHALT CONCRETE BASE COURSE IN LIEU OF 6" COMP. A.B.C. IF THIS OPTION IS USED, THE BASE COURSE SHALL BE FLUSH WITH THE SLEEPER SLAB, AND THE WIDTH SHALL BE THE SAME AS THAT OF THE APPROACH SLAB.

THE CONTRACTOR MAY USE 5" CLASS "A" CONCRETE BASE IN LIEU OF 6" COMP. A.B.C. IF THIS OPTION IS USED, THE CONCRETE BASE SHALL BE FLUSH WITH THE SLEEPER SLAB, AND THE WIDTH SHALL BE THE SAME AS THAT OF THE APPROACH SLAB. THE CONCRETE SHALL BE FINISHED TO A SMOOTH SURFACE AND A LAYER OF 30 LB ROOFING FELT SHALL BE PLACED BETWEEN THE CONCRETE BASE AND THE APPROACH SLAB TO PREVENT BOND. THE APPROACH SLAB SHALL NOT BE CAST UNTIL THE CONCRETE BASE HAS REACHED AN AGE OF THREE CURING DAYS.

THE VERTICAL JOINT ON THE RIGHT AND LEFT SIDE OF THE APPROACH SLAB AT THE ENDS OF THE EVAZOTE JOINT SHALL BE FILLED WITH SILICONE OR OTHER APPROVED MATERIAL IN ORDER TO PREVENT BACKFILL FROM ENTERING THE JOINT OPENING.

THE JOINT OPENING AT THE APPROACH SLAB/DECK INTERFACE SHALL BE SAWS NO MORE THAN 12 HOURS AFTER THE APPROACH SLAB IS CAST. THE JOINT SHALL BE CLEANED OF ALL DEBRIS BEFORE THE SEALANT IS APPLIED. THE JOINT SEALER MATERIAL SHALL CONFORM TO THE REQUIREMENTS OF TYPE SL LOW MODULUS SILICONE SEALANT.

FOR BRIDGE APPROACH FILL INCLUDING FABRIC, 4" Ø DRAINAGE PIPE, AND *78M STONE BACKFILL, SEE ROADWAY PLANS.

APPROACH SLAB SHALL NOT BE CONSTRUCTED PRIOR TO COMPLETION OF THE BRIDGE DECK.

FABRIC SHALL BE TYPE 1 ENGINEERING FABRIC IN ACCORDANCE WITH THE STANDARD SPECIFICATIONS SECTION 1056.

*78M STONE BACKFILL (CLASS V SELECT MATERIAL) SHALL BE IN ACCORDANCE WITH STANDARD SPECIFICATIONS SECTION 1016.

*78M STONE BACKFILL IS TO BE CONTINUOUS ALONG FILL FACE OF BACKWALL FROM OUTSIDE EDGE TO OUTSIDE EDGE OF APPROACH SLAB.

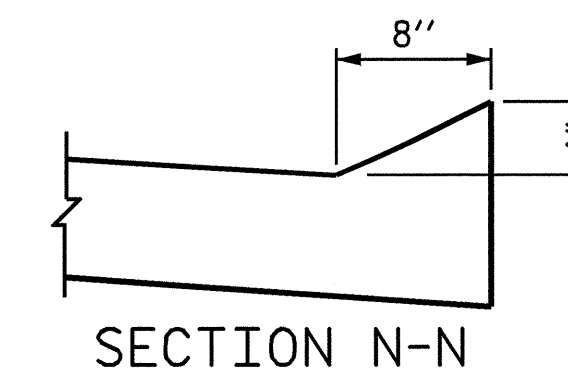
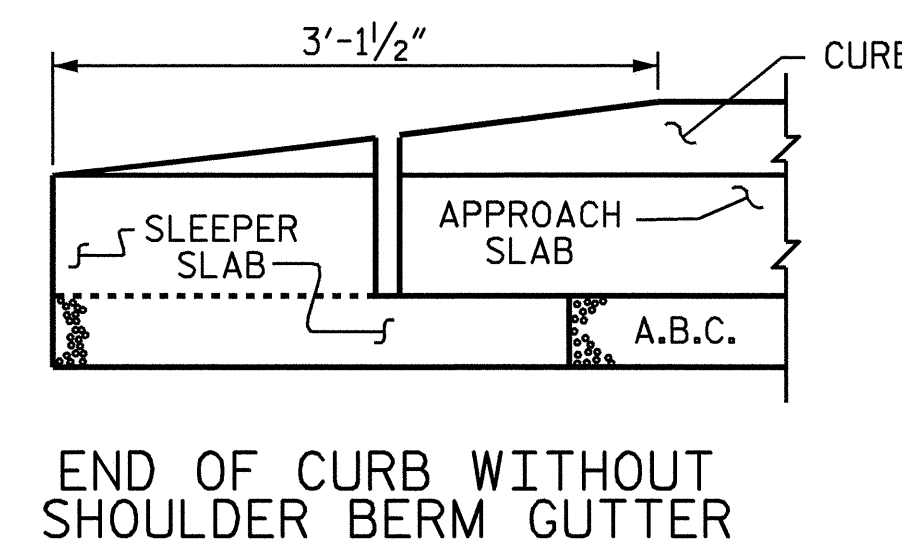
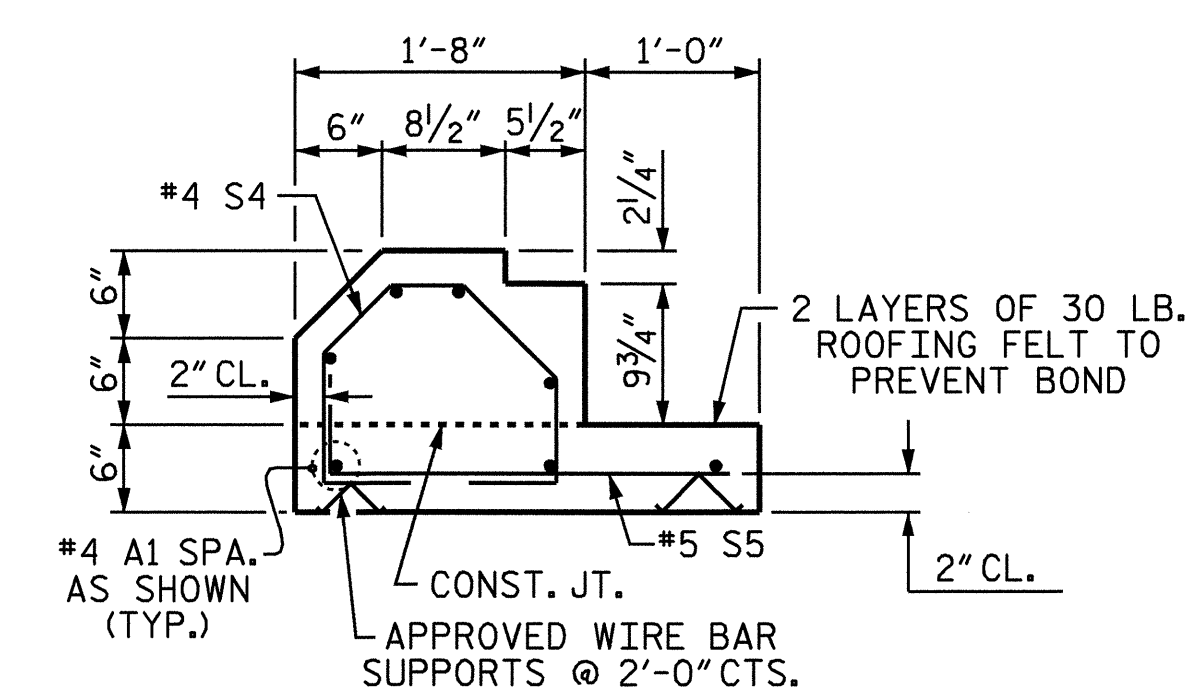
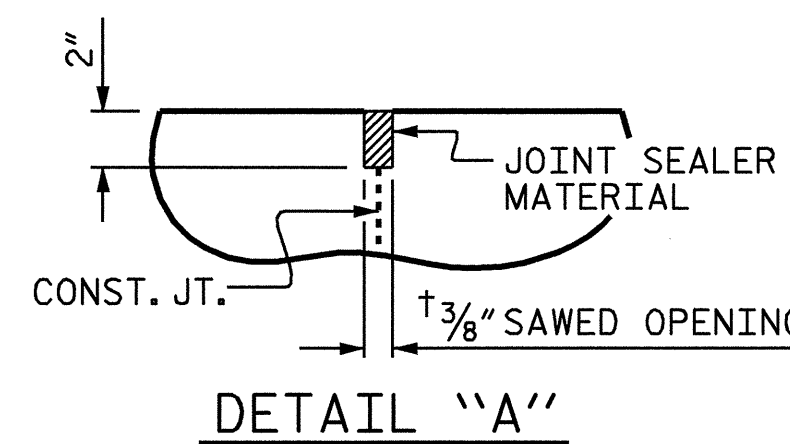
FOR THE 4" Ø DRAINAGE PIPE OUTLET(S), SEE ROADWAY STANDARD DRAWINGS.

WITH EVAZOTE JOINT SEAL

FOR EVAZOTE JOINT SEALS, SEE SPECIAL PROVISIONS.

THE NOMINAL UNCOMPRESSED SEAL WIDTH OF THE EVAZOTE JOINT SEAL SHALL BE 2 1/2".

FOR ELASTOMERIC CONCRETE, SEE SPECIAL PROVISIONS.



BILL OF MATERIAL

FOR APPROACH SLAB @ END BENT #1

BAR	NO.	SIZE	TYPE	LENGTH	WEIGHT
* A1	21	#4	STR	30'-0"	421
A2	14	#4	STR	30'-0"	281
* B1	61	#5	STR	12'-5"	790
B2	61	#6	STR	12'-11"	1183
* S4	31	#4	1	3'-11"	81
S5	31	#5	2	2'-11"	94

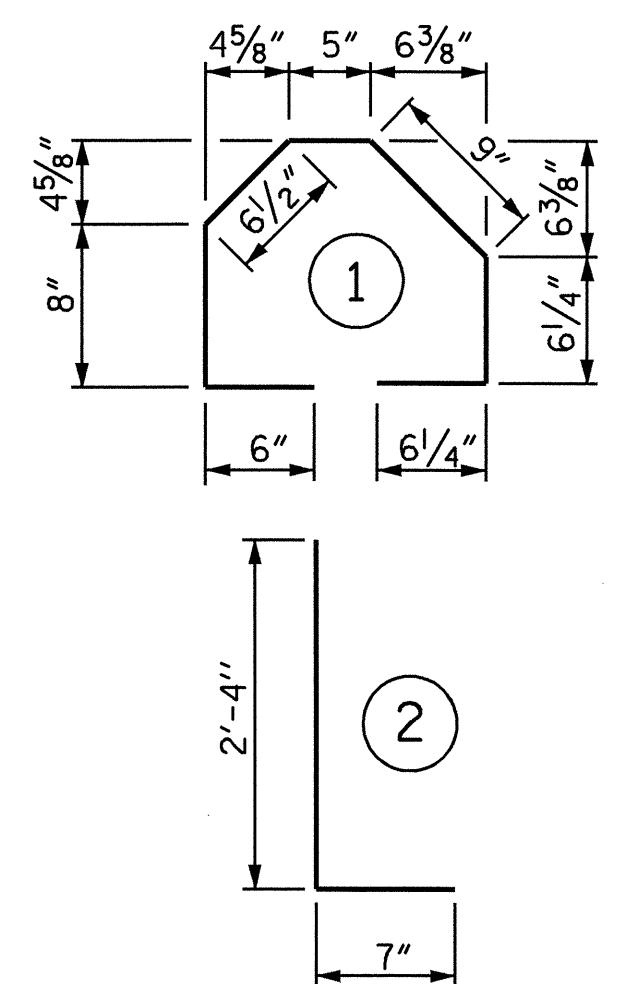
REINFORCING STEEL	LBS.	1558
* EPOXY COATED REINFORCING STEEL	LBS.	1292

CLASS AA CONCRETE	
-------------------	--

POUR #1 - SLAB & CURB	C. Y.	14.9
POUR #2 - SLEEPER SLAB	C. Y.	3.1

TOTAL	C. Y.	18.0
-------	-------	------

BAR TYPES



ALL BAR DIMENSIONS ARE OUT TO OUT

PROJECT NO. B4263
 RUTHERFORD COUNTY
 STATION: 15+34.93 -L-

SHEET 1 OF 3

STATE OF NORTH CAROLINA
 DEPARTMENT OF TRANSPORTATION
 RALEIGH
 STANDARD
 BRIDGE APPROACH SLAB
 FOR INTEGRAL ABUTMENT

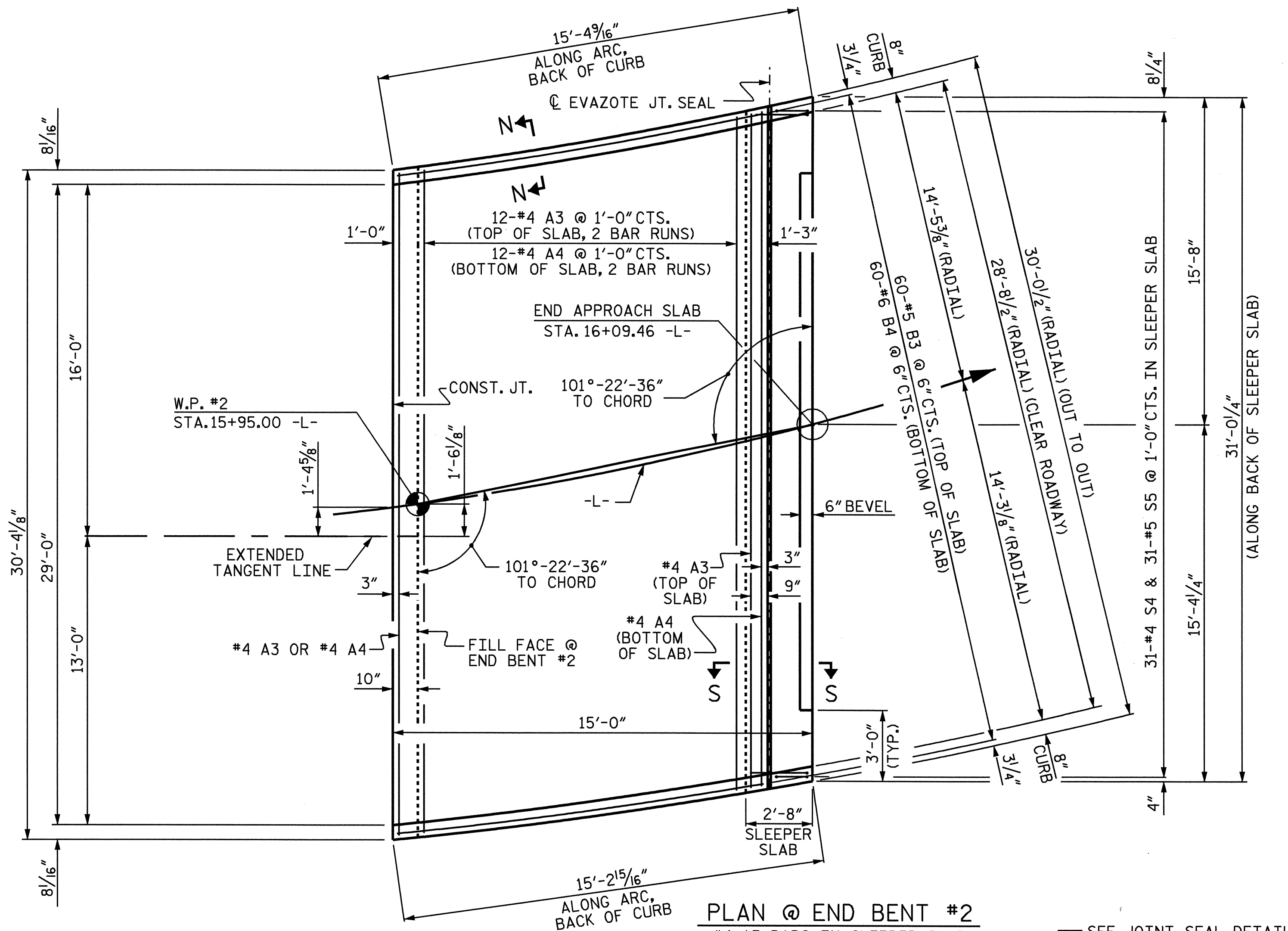
REVISIONS

NO.	BY:	DATE:	NO.	BY:	DATE:
1			3		
2			4		

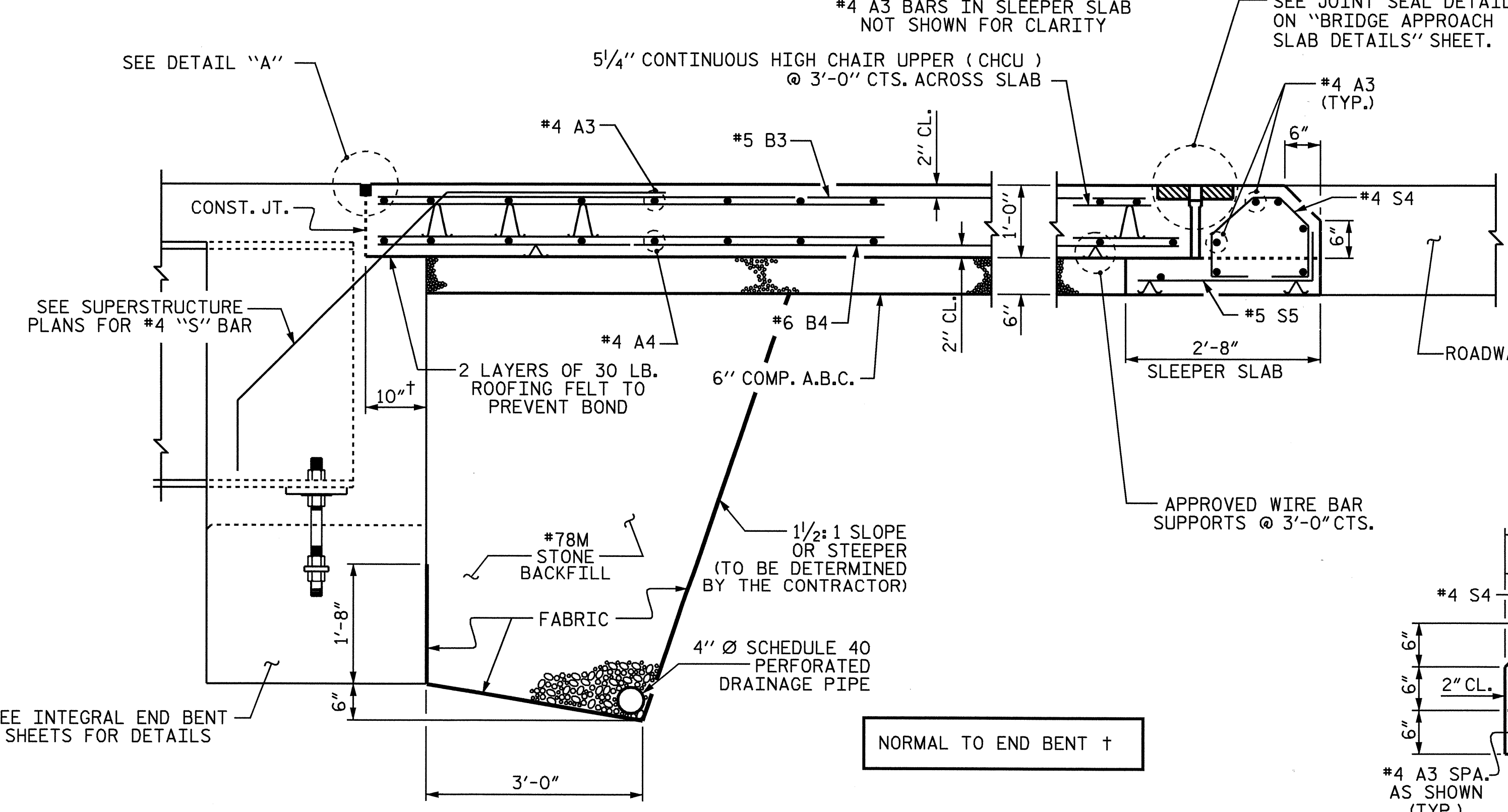
SHEET NO.
 S-22
 TOTAL SHEETS
 24



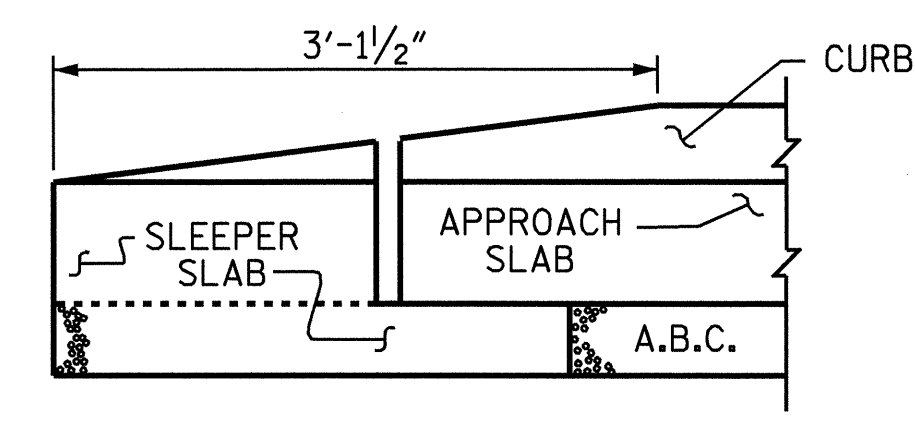
ASSEMBLED BY: M. GUDLAUGSSON DATE: 1/18/08
 CHECKED BY: T.L. AVERETTE DATE: 6/19/08
 DRAWN BY: TLA 10/05
 CHECKED BY: GM 5/06



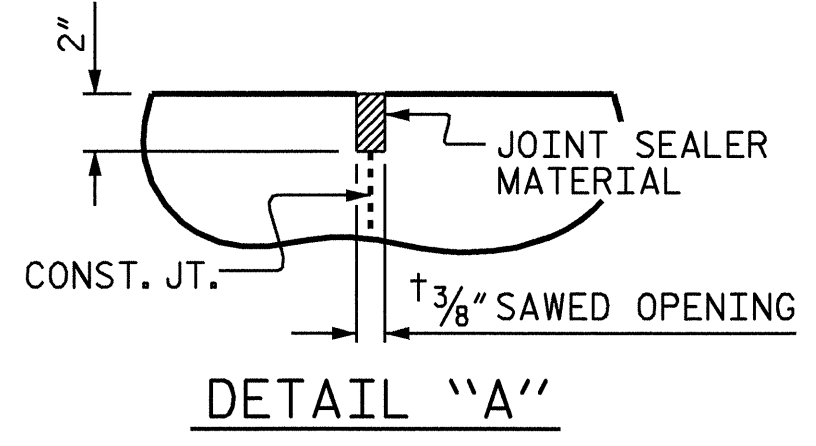
PLAN @ END BENT #2



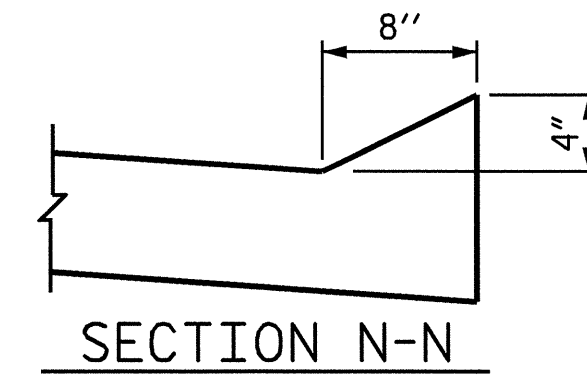
SECTION THRU SLAB



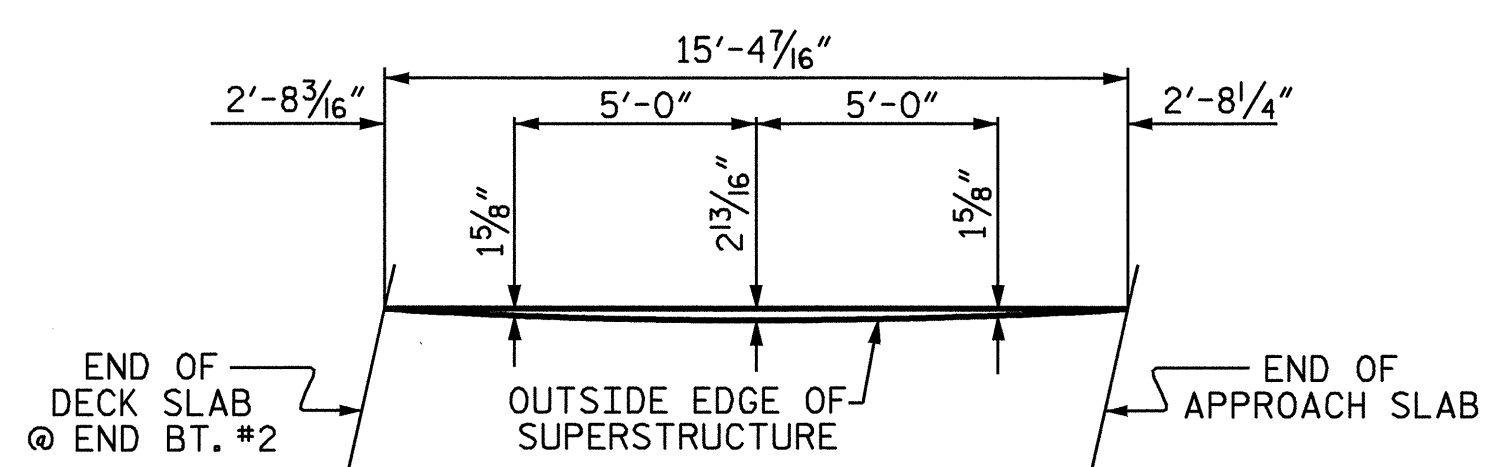
END OF CURB WITHOUT SHOULDER BERM GUTTER



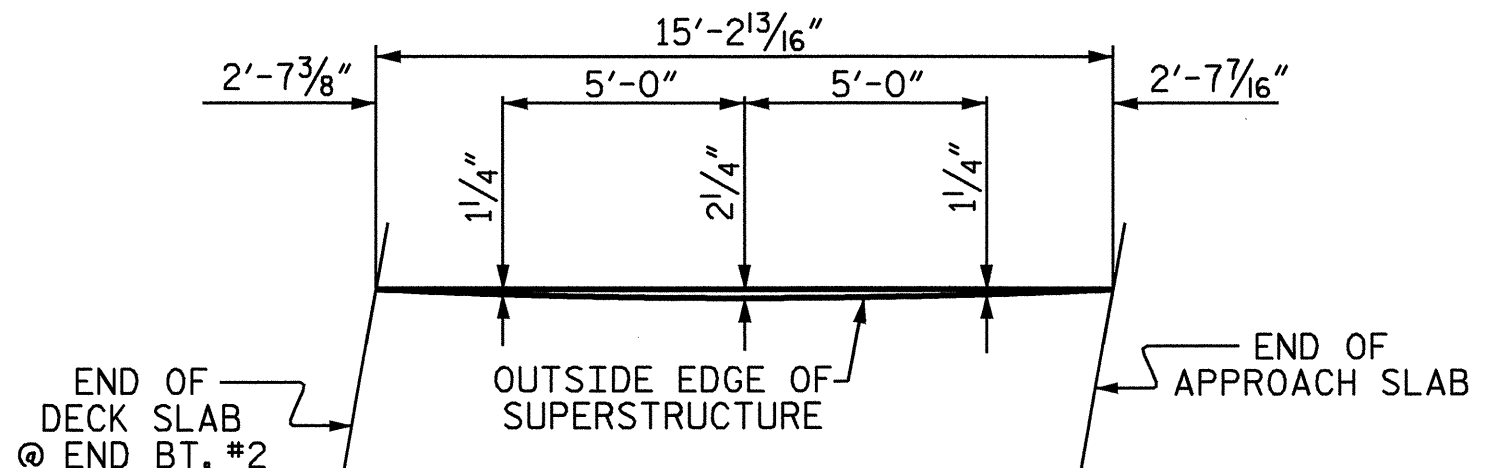
DETAIL "A"



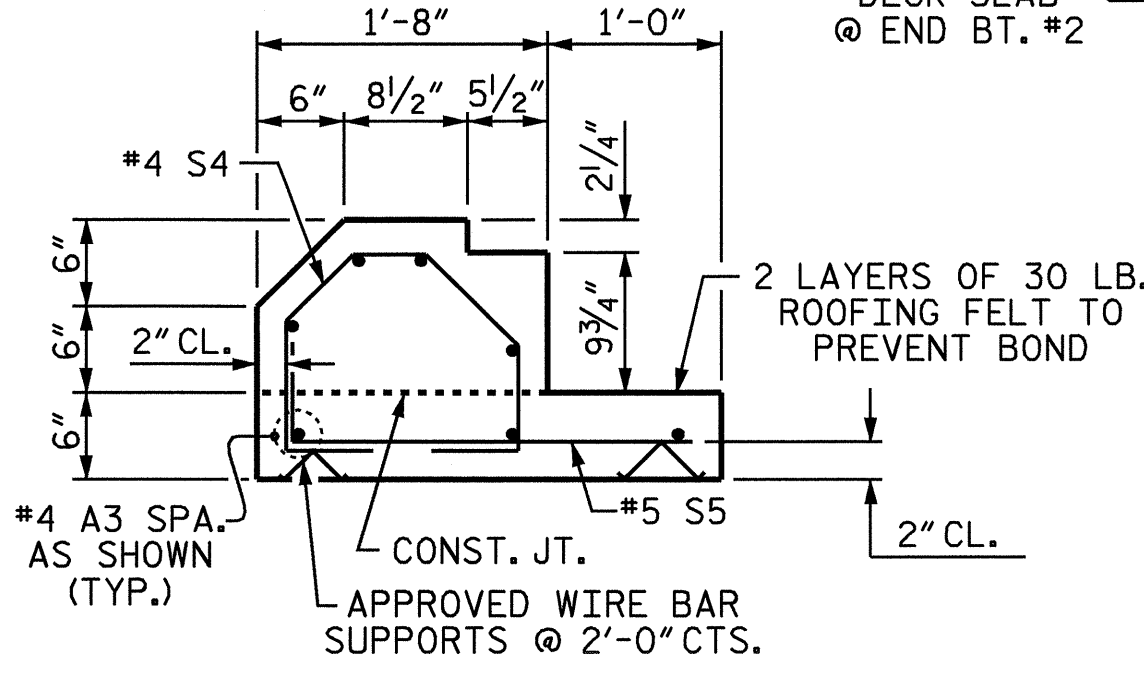
SECTION N-N



ARC OFFSETS LEFT SIDE

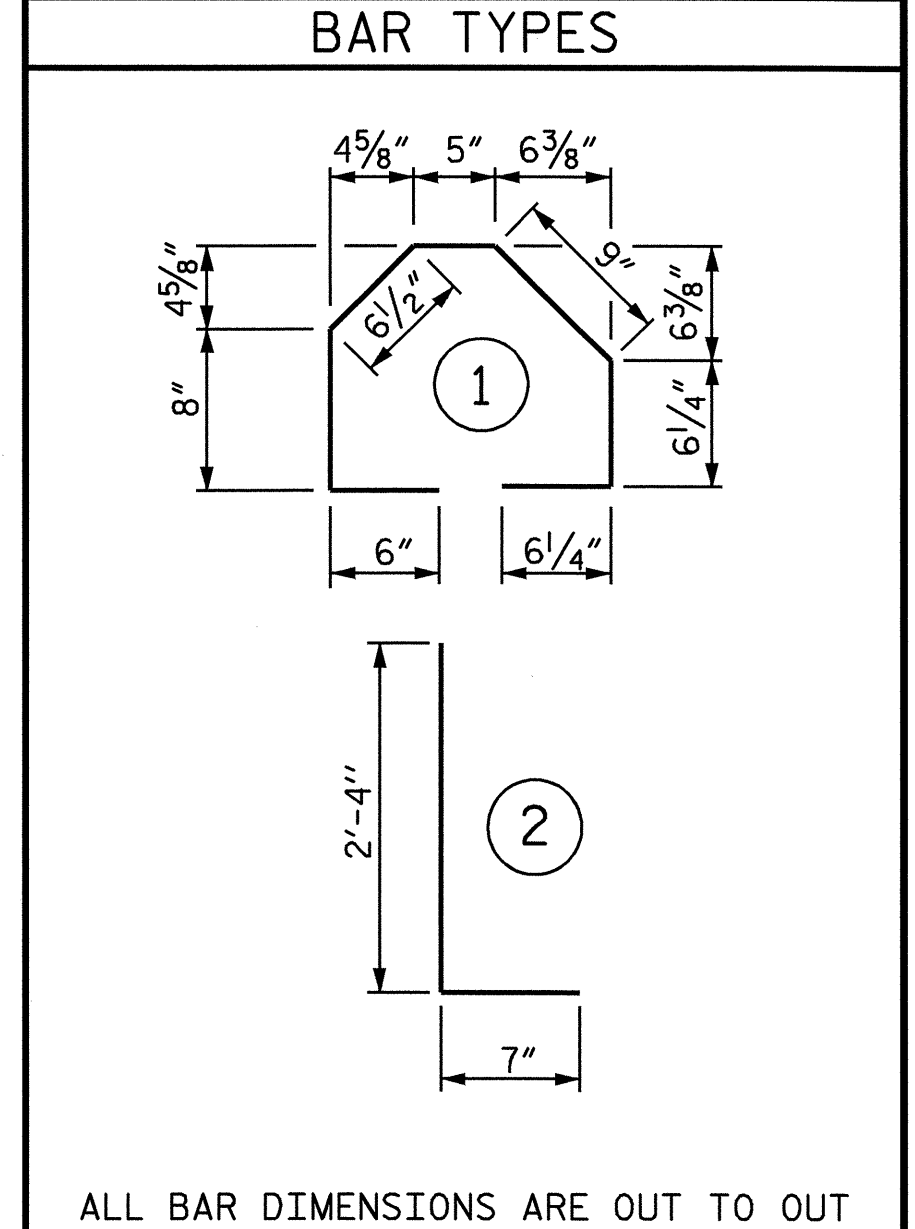


ARC OFFSETS RIGHT SIDE



SECTION S-S SHOWING SLEEPER SLAB

BILL OF MATERIAL					
FOR APPROACH SLAB @ END BENT #2					
BAR	NO.	SIZE	TYPE	LENGTH	WEIGHT
* A3	42	#4	STR	16'-4"	458
A4	28	#4	STR	16'-3"	304
* B3	60	#5	STR	12'-8"	793
B4	60	#6	STR	13'-1"	1179
* S4	31	#4	1	3'-11"	81
S5	31	#5	2	2'-11"	94
REINFORCING STEEL				LBS.	1577
* EPOXY COATED REINFORCING STEEL				LBS.	1332
CLASS AA CONCRETE					
POUR #1 - SLAB & CURB				C. Y.	15.1
POUR #2 - SLEEPER SLAB				C. Y.	3.2
TOTAL				C. Y.	18.3



SPLICE CHART	
BAR	SPLICE
#4 A1	2'-0"
#4 A2	1'-9"

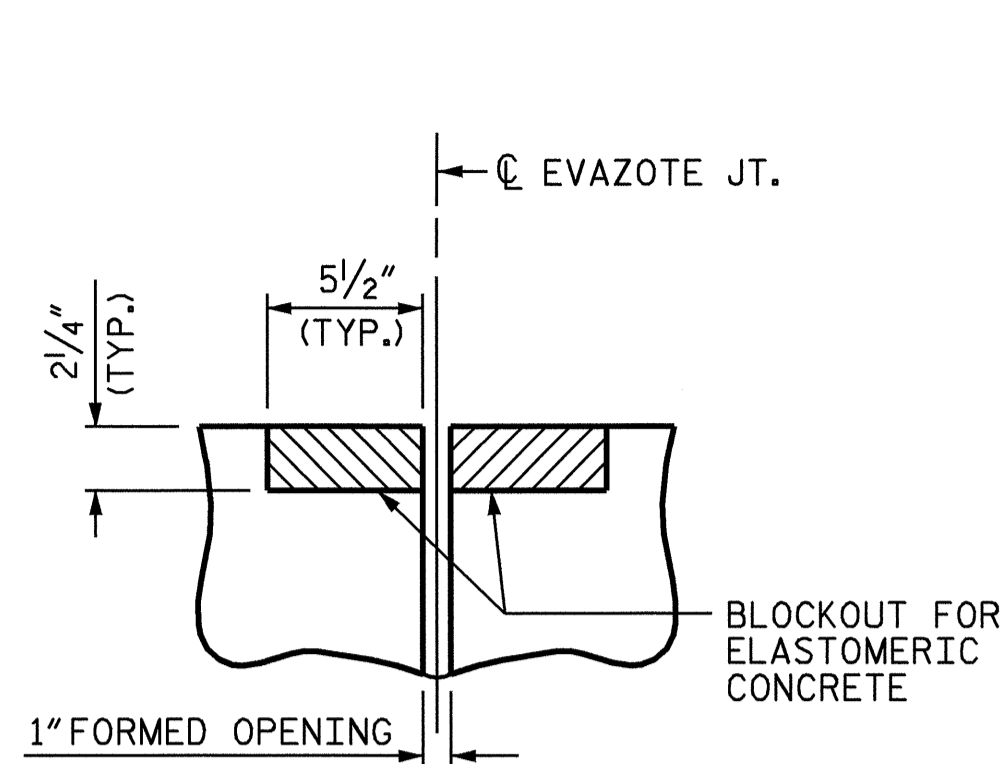
PROJECT NO. B4263
 RUTHERFORD COUNTY
 STATION: 15+34.93 -L-

SHEET 2 OF 3
 STATE OF NORTH CAROLINA
 DEPARTMENT OF TRANSPORTATION
 RALEIGH
 STANDARD
 BRIDGE APPROACH SLAB FOR INTEGRAL ABUTMENT

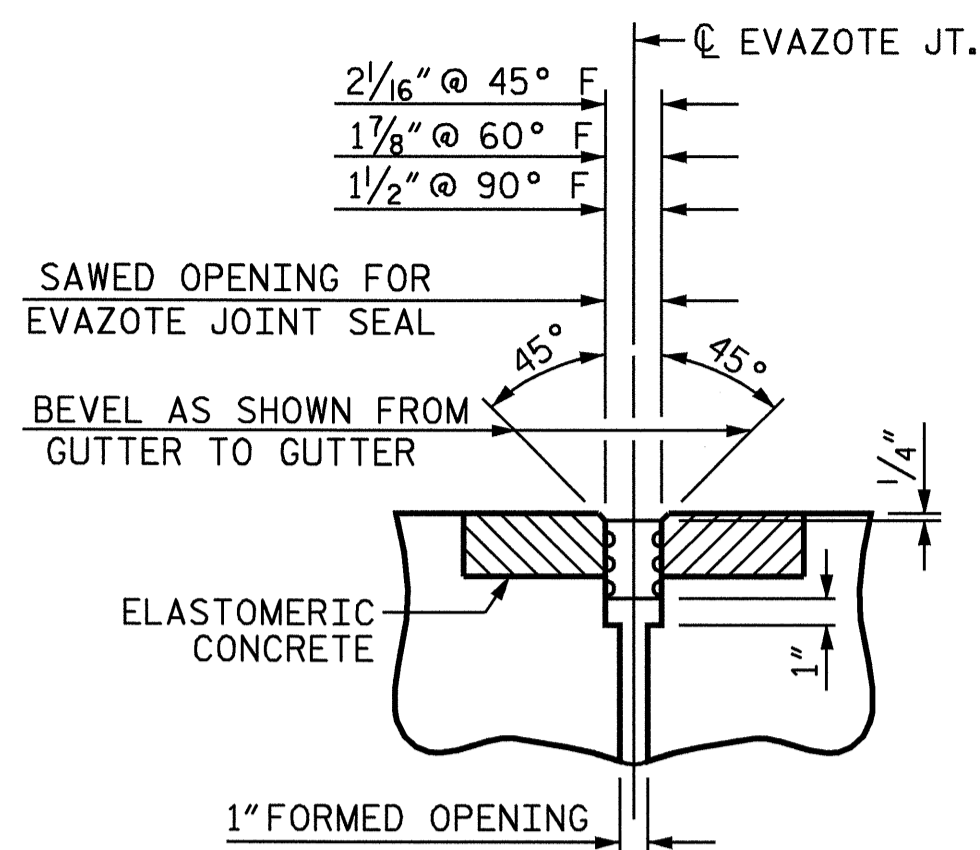
REVISIONS						SHEET NO.
NO.	BY:	DATE:	NO.	BY:	DATE:	S-23
1			3			TOTAL SHEETS 24
2			4			

ASSEMBLED BY: M. GUDLAUGSSON DATE: 1/18/08
 CHECKED BY: T.L. AVERETTE DATE: 6/19/08
 DRAWN BY: TLA 10/05
 CHECKED BY: GM 5/06

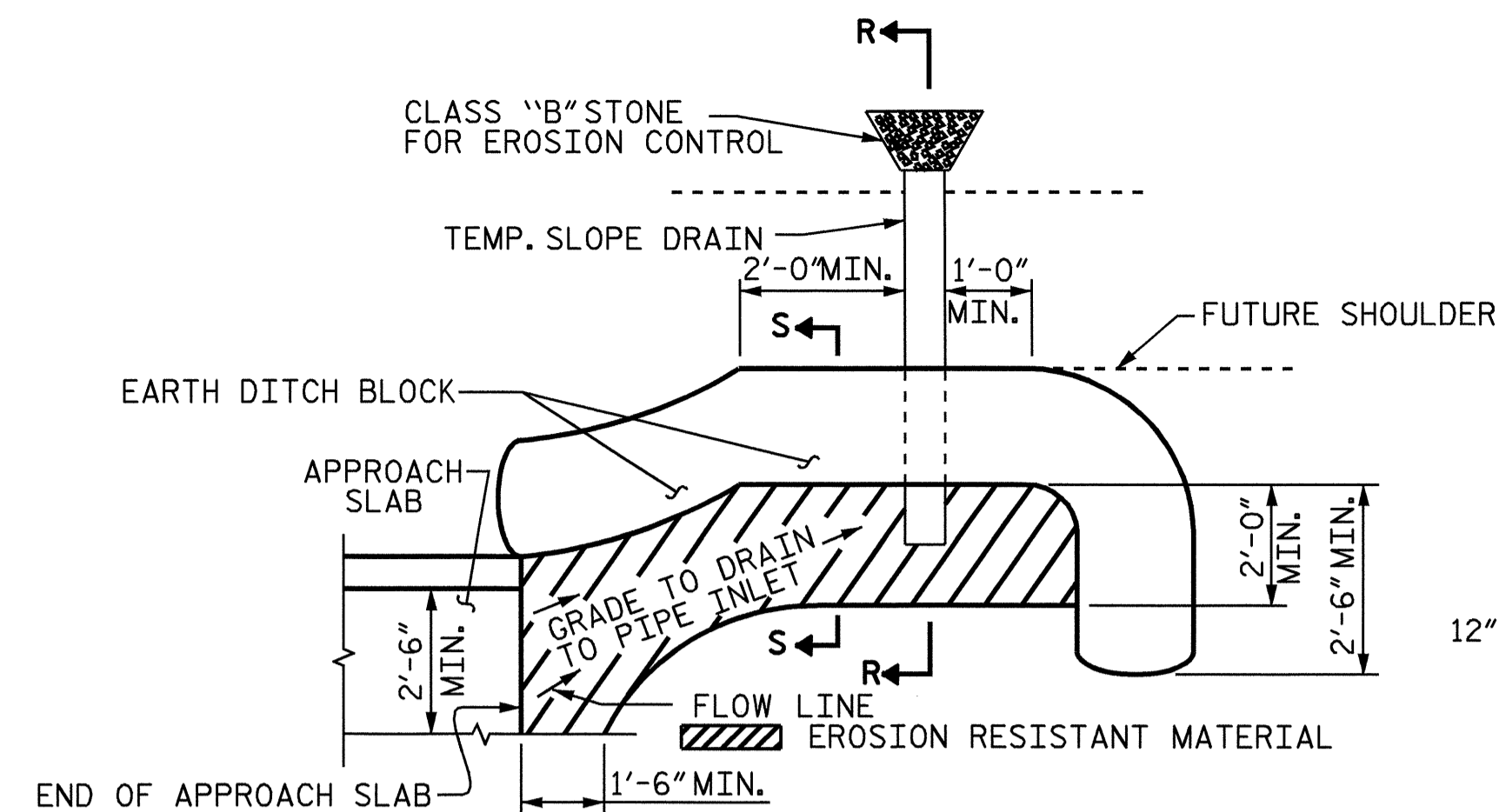




SECTION C-C
EVAZOTE JOINT SEAL
(PRE-SAWED ELASTOMERIC
CONCRETE DIMENSIONS)

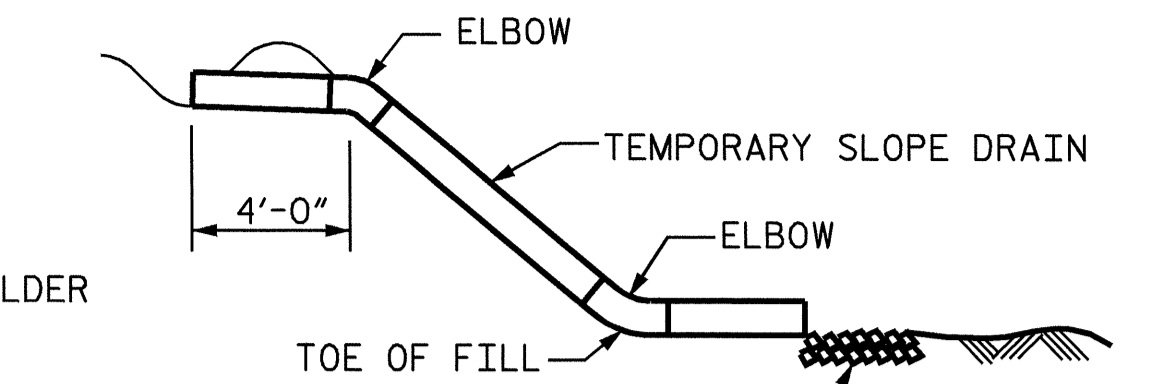


SECTION C-C
EVAZOTE JOINT SEAL

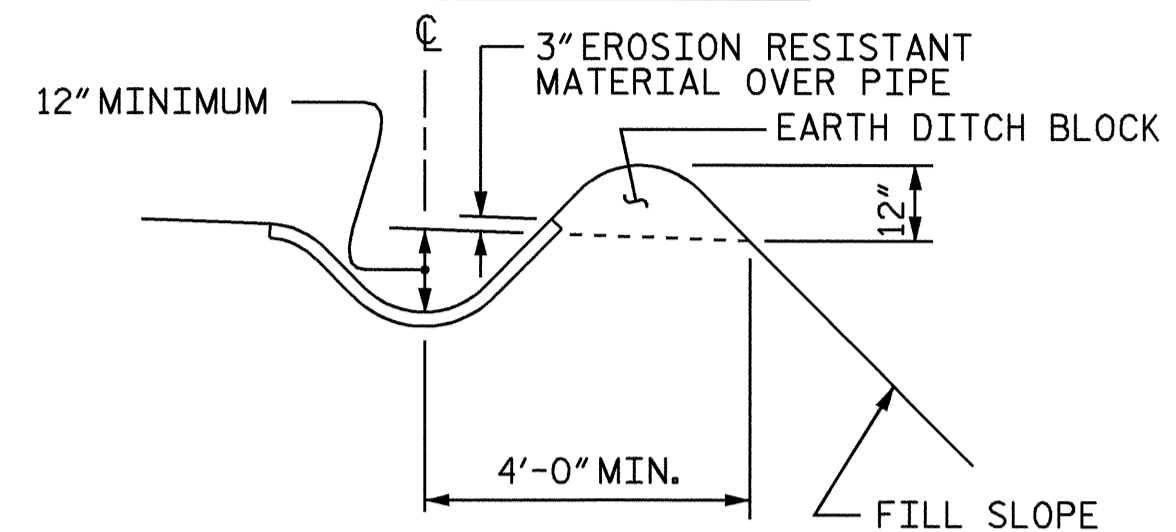


NOTE: IMMEDIATELY AFTER THE CONSTRUCTION OF THE APPROACH SLAB, THE CONTRACTOR SHALL PROVIDE TEMPORARY BERM AND SLOPE DRAIN. CONTRACTOR SHALL GRADE TO PIPE INLET AND PROVIDE EROSION RESISTANT MATERIAL AS SHOWN. THE EROSION RESISTANT MATERIAL SHALL BE EITHER 1) ASPHALT PLANT MIX, TYPE 1 OR TYPE 2, MIN. 2" DEPTH, 2) EROSION CONTROL MAT, OR 3) CONCRETE, AS DIRECTED BY THE ENGINEER. THE SLOPE DRAIN SHALL CONSIST OF A NON-PERFORATED TEMPORARY DRAINAGE PIPE, 12 INCHES IN DIAMETER.

PLAN VIEW



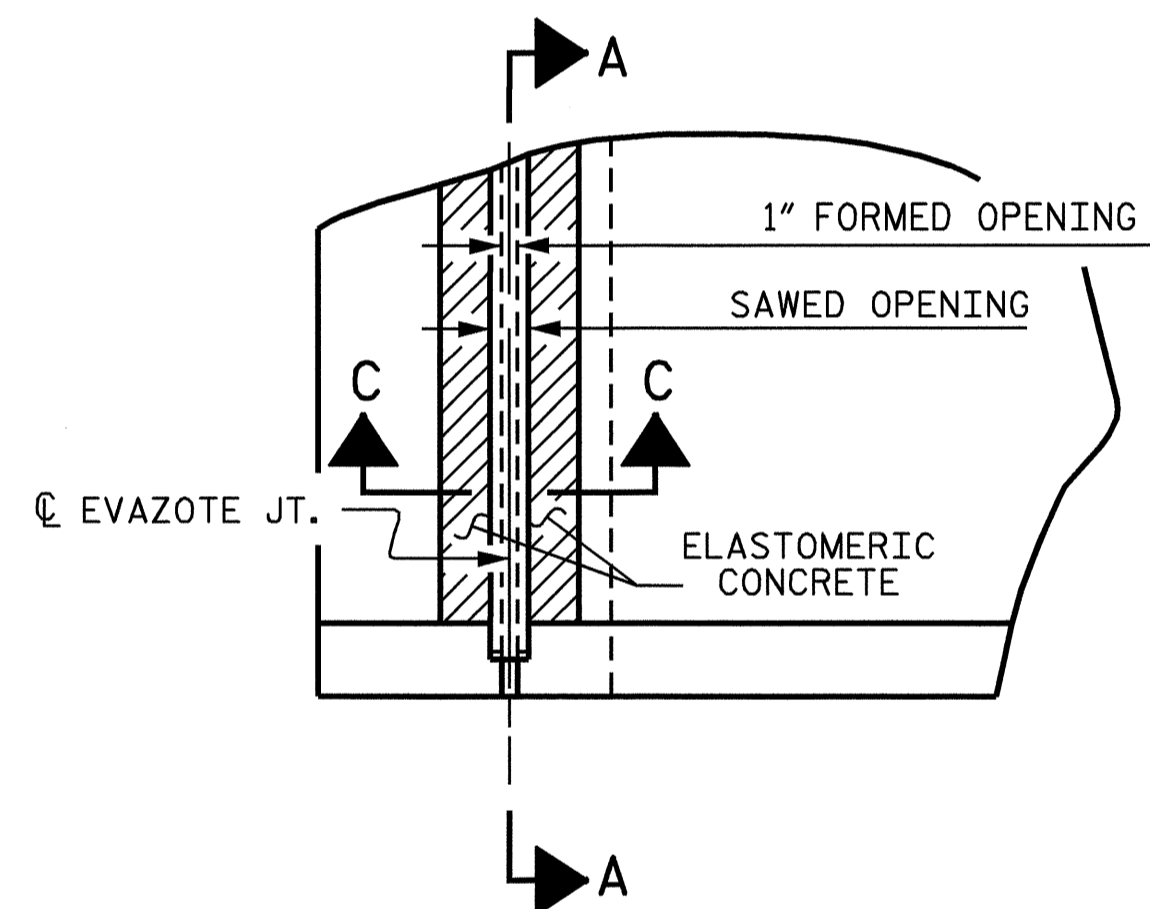
SECTION R-R



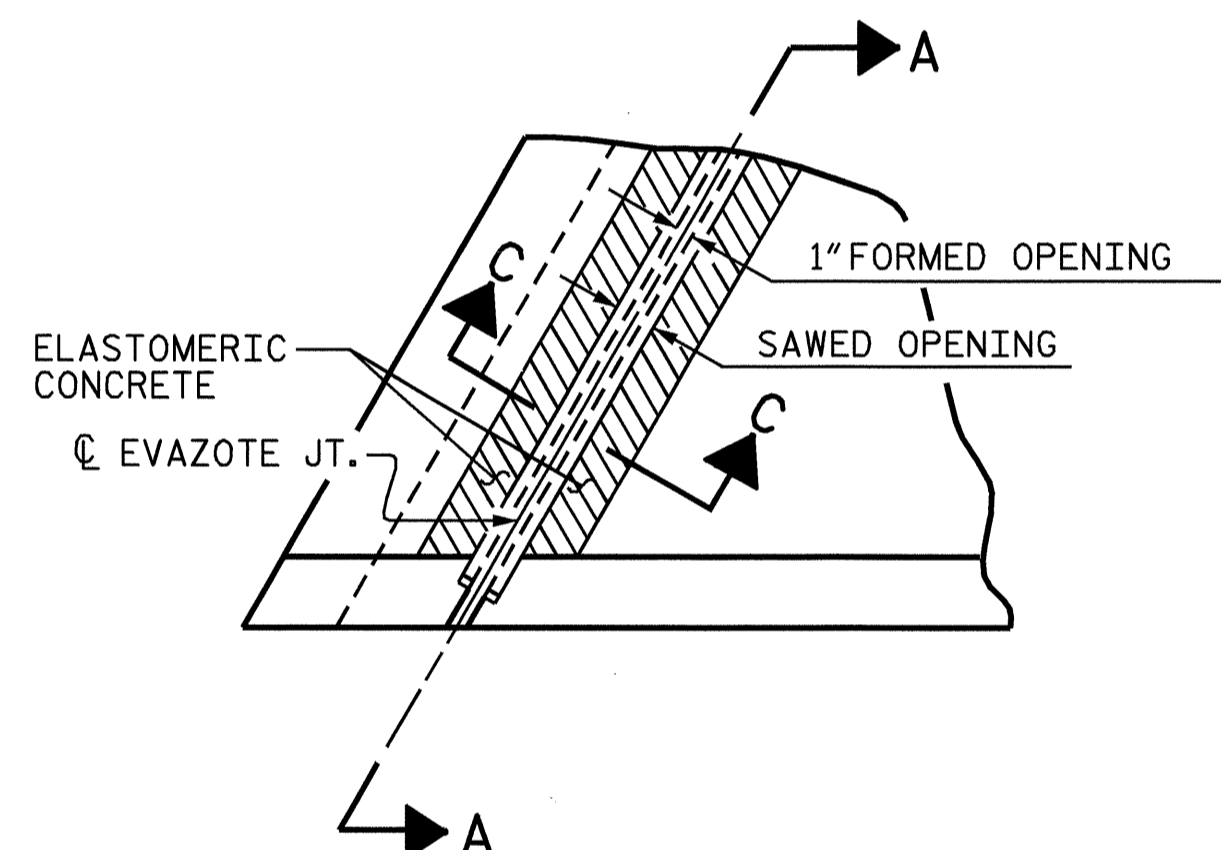
SECTION S-S

TEMPORARY BERM AND SLOPE DRAIN DETAILS

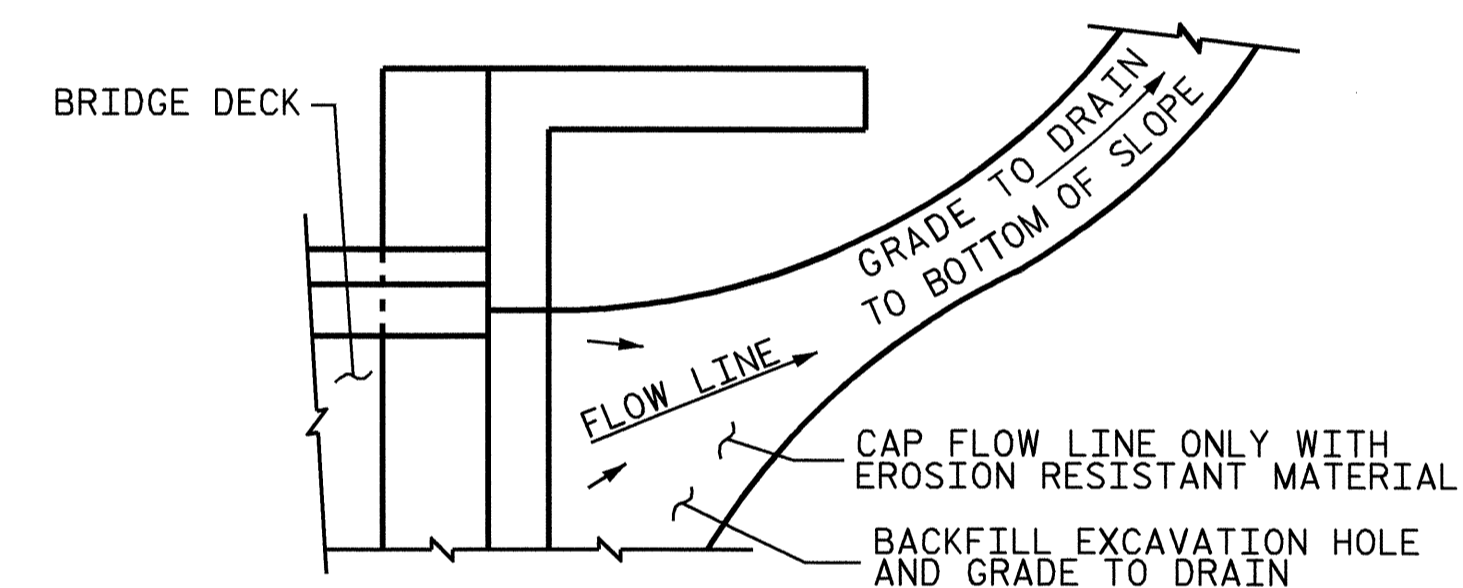
(TO BE USED WHEN SHOULDER BERM GUTTER IS REQUIRED)



PLAN FOR APPROACH SLAB @ END BENT #1



PLAN FOR APPROACH SLAB @ END BENT #2

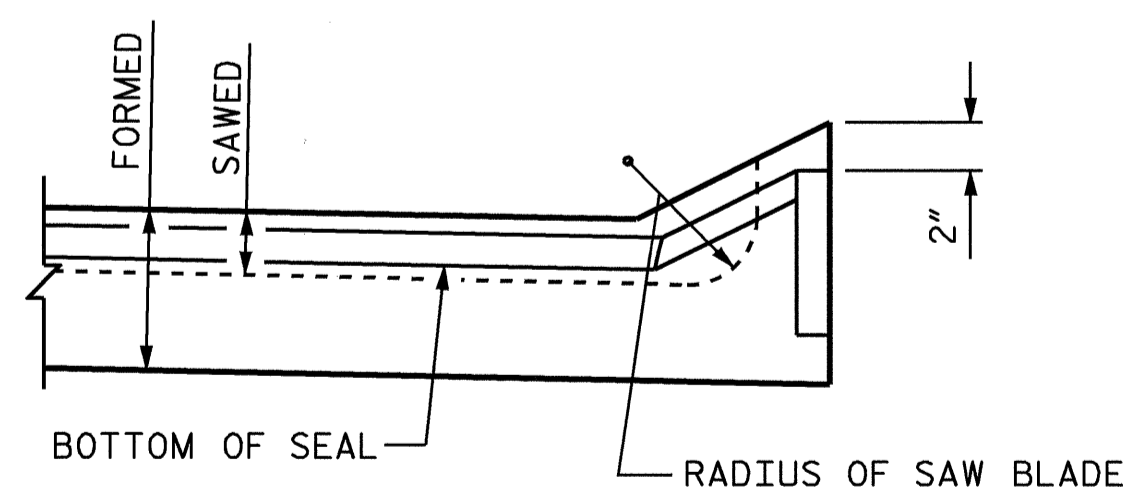


NOTE: IF THE APPROACH SLAB IS NOT CONSTRUCTED IMMEDIATELY AFTER THE BACKFILLING OF THE END BENT EXCAVATION, GRADE TO DRAIN TO THE BOTTOM OF THE SLOPE AND PROVIDE EROSION RESISTANT MATERIAL, SUCH AS FIBERGLASS ROVING OR AS DIRECTED BY THE ENGINEER TO PREVENT SOIL EROSION AND TO PROTECT THE AREA ADJACENT TO THE STRUCTURE. THE CONTRACTOR WILL BE REQUIRED TO REMOVE THESE MATERIALS PRIOR TO CONSTRUCTION OF THE APPROACH SLAB.

TEMPORARY DRAINAGE DETAIL

ELASTOMERIC CONCRETE	
APPROACH SLAB NO.	ELASTOMERIC CONCRETE * (CU. FT.)
1	5.0
2	5.1
TOTAL	10.1

* BASED ON THE MINIMUM BLOCKOUT SHOWN.



SECTION A-A

JOINT SEAL DETAILS @ SLEEPER SLAB

ASSEMBLED BY : M.GUDLAUGSSON DATE : 01-08
 CHECKED BY : T.L.AVERETTE DATE : 6/19/08
 DRAWN BY : FCJ 11/88 REV. 10/17/00 RWW/LES
 CHECKED BY : ARB 11/88 REV. 5/1/03 RWW/JTE
 REV. 5/1/06R MAA/KMM



PROJECT NO. B4263
 RUTHERFORD COUNTY
 STATION: 15+34.93 -L-

SHEET 3 OF 3

STATE OF NORTH CAROLINA DEPARTMENT OF TRANSPORTATION RALEIGH					
STANDARD BRIDGE APPROACH SLAB DETAILS					
REVISIONS					SHEET NO.
NO.	BY:	DATE:	NO.	BY:	DATE:
1			3		
2			4		
					TOTAL SHEETS 24

STD. NO. BAS10

STANDARD NOTES

DESIGN DATA:

SPECIFICATIONS	-----	A.A.S.H.T.O. (CURRENT)
LIVE LOAD	-----	SEE PLANS
IMPACT ALLOWANCE	-----	SEE A.A.S.H.T.O.
STRESS IN EXTREME FIBER OF		
STRUCTURAL STEEL - AASHTO M270 GRADE 36	-	20,000 LBS. PER SQ. IN.
- AASHTO M270 GRADE 50W	-	27,000 LBS. PER SQ. IN.
- AASHTO M270 GRADE 50	-	27,000 LBS. PER SQ. IN.
REINFORCING STEEL IN TENSION		
GRADE 60	--	24,000 LBS. PER SQ. IN.
CONCRETE IN COMPRESSION	-----	1,200 LBS. PER SQ. IN.
CONCRETE IN SHEAR	-----	SEE A.A.S.H.T.O.
STRUCTURAL TIMBER - TREATED OR		
UNTREATED - EXTREME FIBER STRESS	-----	1,800 LBS. PER SQ. IN.
COMPRESSION PERPENDICULAR TO GRAIN OF TIMBER	-----	375 LBS. PER SQ. IN.
EQUIVALENT FLUID PRESSURE OF EARTH	-----	30 LBS. PER CU. FT.
		(MINIMUM)

MATERIAL AND WORKMANSHIP:

EXCEPT AS MAY OTHERWISE BE SPECIFIED ON PLANS OR IN THE SPECIAL PROVISIONS, ALL MATERIAL AND WORKMANSHIP SHALL BE IN ACCORDANCE WITH THE 2002 STANDARD SPECIFICATIONS "FOR ROADS AND STRUCTURES" OF THE N.C. DEPARTMENT OF TRANSPORTATION.

STEEL SHEET PILING FOR PERMANENT OR TEMPORARY APPLICATIONS SHALL BE HOT ROLLED.

CONCRETE:

UNLESS OTHERWISE REQUIRED ON PLANS, CLASS A CONCRETE SHALL BE USED FOR ALL PORTIONS OF ALL STRUCTURES WITH THE EXCEPTION THAT: CLASS AA CONCRETE SHALL BE USED IN BRIDGE SUPERSTRUCTURES, ABUTMENT BACKWALLS, AND APPROACH SLABS; CLASS B CONCRETE SHALL BE USED FOR SLOPE PROTECTION AND RIP RAP; AND CLASS S SHALL BE USED FOR UNDERWATER FOOTING SEALS.

CONCRETE CHAMFERS:

UNLESS OTHERWISE NOTED ON THE PLANS, ALL EXPOSED CORNERS ON STRUCTURES SHALL BE CHAMFERED 3/4" WITH THE FOLLOWING EXCEPTIONS: TOP CORNERS OF CURBS MAY BE ROUNDED TO 1-1/2" RADIUS WHICH IS BUILT INTO CURB FORMS; CORNERS OF TRANSVERSE FLOOR EXPANSION JOINTS SHALL BE ROUNDED WITH A 1/4" FINISHING TOOL UNLESS OTHERWISE REQUIRED ON PLANS; AND CORNERS OF EXPANSION JOINTS IN THE ROADWAY FACES AND TOPS OF CURBS AND SIDEWALKS SHALL BE ROUNDED TO A 1/4" RADIUS WITH A FINISHING STONE OR TOOL UNLESS OTHERWISE REQUIRED ON PLANS.

DOWELS:

DOWELS WHEN INDICATED ON PLANS AS FOR CULVERT EXTENSIONS, SHALL BE EMBEDDED AT LEAST 12" INTO THE OLD CONCRETE AND GROUTED INTO PLACE WITH 1:2 CEMENT MORTAR.

ALLOWANCE FOR DEAD LOAD DEFLECTION, SETTLEMENT, ETC. IN CASTING SUPERSTRUCTURES:

BRIDGES SHALL BE BUILT ON THE GRADE OR VERTICAL CURVE SHOWN ON PLANS. SLABS, CURBS AND PARAPETS SHALL CONFORM TO THE GRADE OR CURVE.

ALL DIMENSIONS WHICH ARE GIVEN IN SECTION AND ARE AFFECTED BY DEAD LOAD DEFLECTIONS ARE DIMENSIONS AT CENTER LINE OF BEARING UNLESS OTHERWISE NOTED ON PLANS. IN SETTING FORMS FOR STEEL BEAM BRIDGES AND PRESTRESSED CONCRETE GIRDER BRIDGES, ADJUSTMENTS SHALL BE MADE DUE TO THE DEAD LOAD DEFLECTIONS FOR THE ELEVATIONS SHOWN. WHERE BLOCKS ARE SHOWN OVER BEAMS FOR BUILDING UP TO THE SLAB, THE VERTICAL DIMENSIONS OF THE BLOCKS SHALL BE ADJUSTED BETWEEN BEARINGS TO COMPENSATE FOR DEAD LOAD DEFLECTIONS, VERTICAL CURVE ORDINATE, AND ACTUAL BEAM CAMBER. WHERE BOTTOM OF SLAB IS IN LINE WITH BOTTOM OF TOP FLANGES, DEPTH OF SLAB BETWEEN BEARINGS SHALL BE ADJUSTED TO COMPENSATE FOR DEAD LOAD DEFLECTION, VERTICAL CURVE ORDINATE, AND ACTUAL BEAM CAMBER.

IN SETTING FALSEWORK AND FORMS FOR REINFORCED CONCRETE SPANS, AN ALLOWANCE SHALL BE MADE FOR DEAD LOAD DEFLECTIONS, SETTLEMENT OF FALSEWORK, AND PERMANENT CAMBER WHICH SHALL BE PROVIDED FOR IN ADDITION TO THE ELEVATIONS SHOWN. AFTER REMOVAL OF THE FALSEWORK, THE FINISHED STRUCTURES SHALL CONFORM TO THE PROFILE AND ELEVATIONS SHOWN ON THE PLANS AND CONSTRUCTION ELEVATIONS FURNISHED BY THE ENGINEER.

DETAILED DRAWINGS FOR FALSEWORK OR FORMS FOR BRIDGE SUPERSTRUCTURE AND ANY STRUCTURE OR PARTS OF A STRUCTURE AS NOTED ON THE PLANS SHALL BE SUBMITTED TO THE ENGINEER FOR APPROVAL BEFORE CONSTRUCTION OF THE FALSEWORK OR FORMS IS STARTED.

REINFORCING STEEL:

ALL REINFORCING STEEL SHALL BE DEFORMED WITH THE EXCEPTION OF #2 BARS WHICH MAY BE FABRICATED FROM COLD DRAWN STEEL WIRE. DIMENSIONS RELATIVE TO PLACEMENT OF REINFORCING ARE TO CENTERS OF BARS UNLESS OTHERWISE INDICATED IN THE PLANS. DIMENSIONS ON BAR DETAILS ARE TO CENTERS OF BARS OR ARE OUT TO OUT AS INDICATED ON PLANS.

WIRE BAR SUPPORTS SHALL BE PROVIDED FOR REINFORCING STEEL WHERE INDICATED ON THE PLANS. WHEN BAR SUPPORT PIECES ARE PLACED IN CONTINUOUS LINES, THEY SHALL BE SO PLACED THAT THE ENDS OF THE SUPPORTING WIRES SHALL BE LAPPED TO LOCK LEGS ON ADJOINING PIECES.

STRUCTURAL STEEL:

AT THE CONTRACTOR'S OPTION, HE MAY SUBSTITUTE 7/8" Ø SHEAR STUDS FOR THE 3/4" Ø STUDS SPECIFIED ON THE PLANS. THIS SUBSTITUTION SHALL BE MADE AT THE RATE OF 3 - 7/8" Ø STUDS FOR 4 - 3/4" Ø STUDS, AND STUD SPACING CHANGES SHALL BE MADE AS NECESSARY TO PROVIDE THE SAME EQUIVALENT NUMBER OF 7/8" Ø STUDS ALONG THE BEAM AS SHOWN FOR 3/4" Ø STUDS BASED ON THE RATIO OF 3 - 7/8" Ø STUDS FOR 4 - 3/4" Ø STUDS. STUDS OF THE LENGTH SPECIFIED ON THE PLANS MUST BE PROVIDED. THE MAXIMUM SPACING SHALL BE 2'-0".

EXCEPT AT THE INTERIOR SUPPORTS OF CONTINUOUS BEAMS WHERE THE COVER PLATE IS IN CONTACT WITH BEARING PLATE, THE CONTRACTOR MAY, AT HIS OPTION, SUBSTITUTE FOR THE COVER PLATES DESIGNATED ON THE PLANS COVER PLATES OF THE EQUIVALENT AREA PROVIDED THESE PLATES ARE AT LEAST 5/16" IN THICKNESS AND DO NOT EXCEED A WIDTH EQUAL TO THE FLANGE WIDTH LESS 2" OR A THICKNESS EQUAL TO 2 TIMES THE FLANGE THICKNESS. THE SIZE OF FILLET WELDS SHALL CONFORM TO THE REQUIREMENTS OF THE CURRENT ANSI/AASHTO/AWS "BRIDGE WELDING CODE". ELECTROSLAG WELDING WILL NOT BE PERMITTED.

PLACEMENT OF BEAM OR GIRDER MEMBERS ON TRUCKS FOR HAULING SHALL BE DONE IN COMPLIANCE WITH LIMITS SHOWN ON SKETCHES PROVIDED TO THE MATERIALS AND TEST UNIT APPROVED BY THE STRUCTURE DESIGN UNIT DATED MAY 8, 1991. THESE SKETCHES PRIMARILY LIMIT THE UNSUPPORTED CANTILEVER LENGTH OF MEMBERS. WHEN THE CONTRACTOR WISHES TO PLACE MEMBERS ON TRUCKS NOT IN ACCORDANCE WITH THESE LIMITS, TO SHIP BY RAIL, TO ATTACH SHIPPING RESTRAINTS TO THE MEMBERS OR TO INVERT MEMBERS, HE SHALL SUBMIT A SKETCH FOR APPROVAL PRIOR TO SHIPPING. SEE ALSO ARTICLE 1072-11.

WITH THE SOLE EXCEPTION OF EDGES AT SURFACES WHICH BEAR ON OTHER SURFACES, ALL SHARP EDGES AND ENDS OF SHAPES AND PLATES SHALL BE SLIGHTLY ROUNDED BY SUITABLE MEANS TO A RADIUS OF APPROXIMATELY 1/16 INCH OR EQUIVALENT FLAT SURFACE AT A SUITABLE ANGLE PRIOR TO PAINTING, GALVANIZING, OR METALLIZING.

HANDRAILS AND POSTS:

METAL STANDARDS AND FACES OF THE CONCRETE END POSTS FOR THE METAL RAIL SHALL BE SET NORMAL TO THE GRADE OF THE CURB, UNLESS OTHERWISE SHOWN ON PLANS. THE METAL RAIL AND TOPS OF CONCRETE POSTS USED WITH THE ALUMINUM RAIL SHALL BE BUILT PARALLEL TO THE GRADE OF THE CURB.

METAL HANDRAILS SHALL BE IN ACCORDANCE WITH THE PLANS. RAILS SHALL BE AS MANUFACTURED FOR BRIDGE RAILING. CASTINGS SHALL BE OF A UNIFORM APPEARANCE. FINIS AND OTHER DEFORMATIONS RESULTING FROM CASTING OR OTHERWISE SHALL BE REMOVED IN A MANNER SO THAT A UNIFORM COLORING OF THE COMPLETED CASTING SHALL BE OBTAINED. CASTINGS WITH DISCOLORATIONS OR OF NON-UNIFORM COLORING WILL NOT BE ACCEPTED. CERTIFIED MILL REPORTS ARE REQUIRED FOR METAL RAILS AND POSTS.

SPECIAL NOTES:

GENERALLY, IN CASE OF DISCREPANCY, THIS STANDARD SHEET OF NOTES SHALL GOVERN OVER THE SPECIFICATIONS, BUT THE REMAINDER OF THE PLANS SHALL GOVERN OVER NOTES HEREON, AND SPECIAL PROVISIONS SHALL GOVERN OVER ALL. SEE SPECIFICATIONS ARTICLE 105-4.

ENGLISH

JANUARY, 1990

STD. NO. SN